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A
GUIDE TO HEALTH;
BEING
CAUTIONS AND DIRECTIONS
IN THE
TREATMENT OF DISEASES.

DESIGNED CHIEFLY FOR THE USE OF
STUDENTS.

BY THE REV. JOSEPH TOWNSEND,
RECTOR OF PEWSEY,
AUTHOR OF THE PHYSICIAN'S VADE MECUM,
AND OF A JOURNEY THROUGH SPAIN.

SECOND EDITION.

Nullius in Verba Magistri.

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P R E F A C E.

THE Work now presented to the Public will, I trust, assist the *Student* in his pursuit of the science of medicine; will teach him, by *methodical arrangement*, to distinguish with certainty, and by *rational indications*, not only to form his plans, but to pursue them with some confidence. Caution is absolutely needful, and a watchful attention is highly to be praised; but timidity, if the offspring of ignorance, is, in a medical practitioner, most worthy of reproach.

This *Guide to Health* is not, however, meant to supersede the *Nosologia Methodica* of Dr. CULLEN: that work, I may venture to predict, will stand the test of time. Of this, above all others, I would say to Students,

Opus hoc
Nocturnâ versate manu, versate diurnâ.

The *nosological* part of my work is founded upon his: the *practical observations* are derived from my own experience in the country, from conversation

with the ablest physicians in Britain, France, and Spain, and from the most approved authors.

It is much to be lamented, that Dr. CULLEN did not leave an English translation of his *Nosology*, for the benefit of *country Apothecaries*. To supply the place of this, I may perhaps venture to recommend my Work, in which they may learn to distinguish not only *Diseases*, but their *Causes*, which is most certainly the only foundation for a rational and successful practice.

This Work will, I trust, be acceptable likewise to the country *Clergy*, whose inclination to be useful among their poor parishioners in times of sickness, has too frequently gone beyond their knowledge. I can venture to assure them, that, with moderate application to this Work, the impediment will be speedily removed, and they may have the comfort, not only of attempting to relieve distress, but of seeing clearly the extent of their ability both to distinguish and to cure diseases.

In the practical part I have inserted a variety of forms, and have referred my Readers to many prescriptions in my *Physician's Vade Mecum*: but I wish them to understand, that these are given merely as Examples, to be altered, as the age, the constitution,

tution, and the circumstances, of the patient may require.

Let the young practitioner learn the nosology ; let him study the Indications ; let him be attentive to the Operation of every simple medicine ; and he will be never at a loss, having a slight knowledge of Chemistry, for his Prescriptions : but without this knowledge and attention, his blunders will be innumerable.

If any one, not bred to science, should imagine, that by consulting this work he may readily become his own Physician, he mistakes my meaning.

Yet such has in general been the defective education of country Surgeons in remote villages, that families of small fortune, unable to seek the advice of a Physician, are not unfrequently reduced to the disagreeable necessity of consulting books. For their sakes therefore chiefly I have given most of the prescriptions in English, that in cases of *emergency* and *despair* they may not be wholly destitute of help : nevertheless, I most earnestly exhort the heads of families not to *tamper* with their children, or others, and give that preference to Books and their own judgment, which is more properly due to the MEDICAL PRACTITIONER.

It is much to be lamented that, in this enlightened age, the attention of the Public should still continue to be turned towards *Specifics*, when it is well known, that the same disease not unfrequently proceeds from a variety of causes, and therefore, properly speaking, *no Specific Remedy* can exist.

What reason can we assign then for the astonishing, and still increasing, demand for *Quack Medicines* and *Quack Books*? Whence is it, that *Quack Medicines* and *Quack Books* are to be found, not merely among the lower classes of society, but in respectable families, and almost in every house? Is it, that they have a higher opinion of such Medicines and of such Books, than of the Judgment, the Skill, the extensive Experience, of men devoted to the science; of men, who have been regularly taught, and who are in the daily habit of distinguishing diseases? No, certainly it is not.—But I leave this important question to be answered by Writers on *Political Economy*, and in the mean time anxiously caution the unwary of being misled by those who have obtained the KING's LETTERS PATENT.

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INTRODUCTION.

DISEASES may be reduced to four classes.

1. PYREXIÆ.
2. NEUROSES.
3. CACHEXIÆ.
4. LOCALES.

Of which the subsequent are the distinctive characters.

1. PYREXIÆ.

Febrile diseases.—After cold shivering a frequency of pulse, with increase of heat and thirst.

2. NEUROSES.

Nervous diseases.—Affections of sense and motion disturbed; without either idiopathic Pyrexia or topical disease.

3. CACHEXIÆ.

Cachexies.—A depraved habit of body; without Pyrexia or Neurosis, as original diseases.

4. LOCALES.

Local diseases.—Morbid affections which are partial.

When therefore a disease presents itself, the medical student must carefully examine to which class it may be referred.

If for example he finds a frequency of pulse, with increase of heat succeeding cold shiverings, the disease must be clearly referred to the class PYREXIÆ.

Having thus traced it to the class, he will proceed to investigate the order.

The Orders of this Class have been reckoned five; they should be only four.

1. *Febres.*
2. *Phlegmasiæ.*
3. *Exanthemata.*
4. *Hæmorrhagiæ.*

Of which the pathognomic symptoms are the following :

1. FEBRES.

Pyrexia, with loss of appetite, and diminution of strength, but no primary local affection.

2. PHLEGMASIÆ.

Pyrexia, with topical pain and inflammation.

3. EXANTHEMATA.

Contagious diseases, beginning with fever, and followed by an eruption on the skin.

4. HÆMORRHAGIÆ.

Pyrexia, with a discharge of blood, without any external injury.

Let the student, having traced a disease, for instance, to the Class PYREXIÆ, suppose, that with the frequency of pulse and increase of heat, after cold shiverings, he meets with loss of appetite and diminution of strength, not attended by an eruption on the skin; in this case he would refer the disease to the Order FEBRES.

Of the Order FEBRES we have two genera.

- $$\left\{ \begin{array}{l} 1. \textit{Febris Continua.} \\ 2. \textit{Febris Intermittens.} \end{array} \right.$$

1. *Febris Continua.*

Continued Fever.—No intermission, yet subject to exacerbations twice in one day.

2. *Febris Intermittens.*

Ague. Intermittent Fever.—Cold, hot, and sweating stages in succession, attending each paroxysm, and followed by an intermission.

Quotidians usually come on in the morning, at an interval of about twenty-four hours.

Tertians at noon, at an interval of about forty-eight hours.

Quartans in the afternoon, with an interval of about seventy-two hours.

Although strictly speaking we have only two genera of the Order FEBRES, I shall here venture, with most nosologists, to introduce a third; confessing at the same time, that loss of appetite, a characteristic symptom of the Order, is not essential to this Genus.

3. *Febris Heftica.*

Heftic Fever.—Has exacerbations at noon, but chiefly in the evening, with flight remiffions in the morning after nocturnal fweats; the urine deponing a bran-like fediment. Thirft moderate.

Should then a cafe prefent itfelf, which the ftudent, from the characteristic fymptoms, has referred to the Clafs PYREXIAE, and to the Order *Febres*; and fould he in this difeafe remark no intermiffion, although it be fubject to exacerbations twice in one day, he cannot be at a lofs to afcertain the Genus, but will confider it as a *Febris Continua*.

Should he obferve cold, hot, and fweating ftages in fucceffion attending each paroxyfm, and followed by an intermiffion, he will not hesitate to pronounce it *Febris Intermittens*.

Should he with Pyrexia find moderate thirft, the evening exacerbations with the morning fweats, but no intermiffion; and fould he obferve a bran-like fediment in the urine; he may be certain, that his patient has an *Heftic*.

I have chofen thus to begin with fever, as being, 1^{ft}, the difeafe of all others moft incident to the human race; 2^d, as being under improper management the moft destructive; 3^d, as throwing light on many other parts of the Nofology.

Class 1. PYREXIÆ. Order 1. FEBRES.

Genus 1. *Febris Continua*.

Continued Fevers.

SECTION I.

THEIR species have been distinguished into *ardent* or *inflammatory*; *nervous*; *putrid*; *malignant*; *jail and hospital*; *plague*; *bilious*; *bilious autumnal*; and *yellow fever of Jamaica*. All these appellations have a degree of propriety annexed to them; but I have thought it sufficient to distinguish two species, *Synocha* and *Typhus*, because, strictly speaking, all continued fevers may be reduced to one of these.

Synocha.

Heat much increased; pulse frequent, strong, hard; urine high coloured; senses not much impaired.

Typhus.

Heat moderate; pulse quick, weak, small; senses much impaired; prostration of strength,

Such are the definitions; but in order to give a clear and distinct idea, it may be proper to state a case of what has been called the *Bilious Autumnal Fever*, which began, as *Synocha*, with inflammatory symptoms, and terminated in *Typhus*, with symptoms of putridity; that having established facts, we may introduce observations on those facts, and afterwards attempt some rational theory of the disease.

SECTION II.

A CASE OF CONTINUED FEVER, WITH OCCASIONAL
REMARKS AND OBSERVATIONS.

A. B. of a sedentary life and of a bilious habit, subject for many months to costiveness, and liable upon every sudden application of cold, when he had been previously heated, to symptoms of jaundice: subject likewise to the *gastrodynia flatulenta* of Sauvage, which symptoms had always been removed by emetics and cathartics: subject also for some considerable time, previous to the attack of fever, to such debility, that he could not without sweating work five minutes in his garden; and passing restless nights, unable to procure sleep without cathartic medicines.

This patient, on the fourth of September, *being bathed in sweat, met a cold northern blast*. He returned home, however, without the least suspicion that he had received injury. He passed a restless night; but when he rose in the morning, he perceived no approach of fever, till the commencement of a solar eclipse, at half after nine, during which he was seized, September 5th, with chills, followed by shiverings, slight delirium, and loss of appetite. He continued suffering by cold for above four hours, after which a burning heat succeeded, which was followed by a sweat. During the cold stage he took 50 drops of Huxham's essence of Antimony, which emptied his stomach *once*; but finding the symptoms aggravated, and the *gastrodynia flatulenta* making its approach, which was marked by a pungent pain under the right breast; finding likewise a cough, attended by

by a discharge of phlegm streaked with blood ; he sent for medical assistance, and took saline draughts, followed the succeeding day by a cathartic of senna and soluble tartar.

OBSERVATION I.

ON THE POWER OF HEAT AND COLD PRODUCING CHANGES IN THE HUMAN FRAME.

I. THAT *heat*, like all other stimuli, may have a debilitating power, must be obvious to every one, who pays the least attention to plants and animals. During the scorching heats of summer, especially at mid-day, all nature languishes, and her energy is lost.—The plants, exhausted of their vigour, hang their heads ; their foliage droops : and among these the *Mimosa pudica*, the *Dionæa muscipula*, with the *Hedysarum gyrans*, lose their sensibility and motion ; whilst the various tribes of animals, panting for breath, seek some cool retreat. Even in our northern latitude this cannot escape our notice ; but to see it in perfection we must visit the more sultry regions of the south, where the African, patient of heat, is obliged to intermit his labour, whilst the inhabitants of more temperate climates, such as Italy and Spain, retire into some dark recess and sleep. In this cool retreat the vital energy is soon renewed.

2. When there is an accumulation of *heat* in the system, the blood is determined to the surface, and the cutaneous discharge increases; a sweat, usually copious in proportion to the superabundant quantity of heat, breaks out; the evaporation carries off this surplus, and the equilibrium is restored.

3. *Cold*, that is to say the absence of heat, has an opposite effect. When properly applied, it strengthens, giving vigour to the body, and energy to the powers of the mind. These effects are visible in high latitudes till you approach the poles, where all is torpid; or till you ascend to those elevated regions, where eternal winter reigns. There no vegetable thrives except the *Lichen*; no animal but the *Rein-deer* of frozen Lapland, or the *Chamois* on the lofty summits of the Alps. In these situations we may see in the greatest possible perfection the sedative power of extreme and continued cold; but the moderate or the sudden and transitory application of cold has a different effect.

Let us consider its operation, when applied to the surface of the body in the act of bathing. The first effect is a constriction upon the extreme vessels. This propels the blood towards the heart, with such increase of quantity and velocity, as to augment in the same degree its stimulating power. In consequence of this, the reaction of the heart and arteries sends back the blood with increased velocity to the surface of the body, so as in a healthy subject to overcome
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the stricture, diffuse a genial warmth, and create a keen appetite for food, with a sense of lightness, alacrity, and strength.

4. If *cold* be gradually applied, the constriction is more permanent; the internal secretions are increased, and the perspiration is diminished; yet so far is this from producing a disease, that health and vigour are thereby much improved.

5. When *cold and humidity* succeed to heat, more especially if the change be sudden, the balance of the system is destroyed; perspiration is checked; and the blood is determined to the internal surfaces, producing tension in the minuter vessels, and irritation in the arterial system, with inflammatory symptoms either partial or general, such as in Catarrh, Dyfentery, Rheumatism, Fever. In this case, the deleterious effects will be, to use the language of mathematics, inversely as the force of circulation. This, however, will be once more considered, when we come to *Catarrh*.

6. When *heat* suddenly succeeds to *cold*, the blood increased in volume is powerfully determined to the surface, where the extreme vessels being distended beyond their tone, inflammation follows, and we have as before either Catarrhs, Rheumatic symptoms, or a fever. In this case, the deleterious effects will be directly as the force of circulation

7. The more intense the preceding *cold*, and the longer its continuance, the greater is the accumulation

lation of irritability, and the more violent are the effects produced by sudden application of *heat*.

To make this *accumulation of irritability* more sensible, you need only handle snow, or expose yourself to the protracted stroke of a keen frosty blast, and then approach the fire, if the inflammation and the pain will permit you to draw nigh.

Should you darken one eye for five minutes only, and then remove the covering, you will not merely be sensible of increased splendour in that eye, but the stimulus of light will be exceedingly distressing. Or, should you retire from the glare of a meridian sun into a wide apartment, having only a glimmering of day, it will be a considerable time before you can distinguish objects at a distance; that is, before the sensibility of the retina is sufficiently restored to be affected by a weak impression. But, should you have continued for many hours in the dark, you will be able to read distinctly by the feeble light emitted from a glow-worm: or, should you, after a long continuance in perfect darkness, be suddenly exposed to the full blaze of day, with such an accumulation of irritability you would be deprived of sight.

That you may with safety be sufficiently convinced of this, you need but to observe the pupils of a friend, and take notice to what extent the iris is dilated; then let him for a few minutes close his eyes and cover them, so as effectually to preclude the
light.

light. The instant he opens them again, if he looks towards a window, you will remark the iris contracting, and the pupils scarcely to be discerned; yet notwithstanding these avenues of light are so nearly closed, such is the degree of irritation, that he is unable to prevent his lids from shutting, and he feels himself impelled to turn away his eyes. In a short time, however, this accumulated irritability is exhausted, the pupils expand, and after a few minutes he can without distress look steadily towards the light.

From this accumulation of irritability it is, that vegetation in the spring is rapid and vigorous, in proportion to the length and severity of the preceding winter.

When therefore in the human frame, the change from *cold* to *heat* is sudden, the first injury is not derived from its exhausting influence, but from its stimulating power; which, with the stimulus of distension, meeting with accumulated irritability in the system, morbidly excites the larger arteries to action; and, as the consequently increasing distension of the extreme vessels communicates by sympathy fresh stimulus to them, action and reaction uninterruptedly proceed, and the injury, till some curative operation is commenced, must constantly increase.

September 6th. All his symptoms were much aggravated, and he was bent nearly double by the *gastrodynia flatulenta*. Pulse 110, full, hard, strong. Tongue very foul. The Eustachian tubes were closed, and deafness ensued.

He continued the saline mixture, with spermaceti for the cough, which was evidently *symptomatic* of irritation in the stomach.

With these medicines were added tartarized antimony, rhubarb, and contrayerva; which procured in the space of three days 17 copious evacuations by stool, with profuse sweating; *but the antimony did not act as an emetic.*

OBSERVATION II.

On the Introduction and the Use of ANTIMONIALS.

TARTARIZED *Antimony*, known commonly by the name of emetic tartar, was long, like James' Powder, considered to be a specific in the cure of Fevers. Basilius Valentinus, a Benedictine monk, was the first who recommended antimonial preparations to the attention of medical practitioners. This he did in a treatise, which he intitled *Currus triumphalis Antimonii*, and published at the close of the fourteenth century. Among the first in modern times, who introduced the use of antimony in fevers, was the famous Dr. Lisle, from whose grandchildren I received

received his preparation, of which the following is the form :

Boil a pound of hartshorn shavings six hours in eight quarts of water, then take them out, dry them and reduce them to a powder. To a given quantity of this add an equal weight of crude antimony, putting the whole well mixed into a crucible. Keep it eight hours on a brisk fire, frequently stirring the mixture with a long thin iron : then reduce it to a very fine powder, and keep it in a bottle for use. The dose is twenty grains.

This nearly is the preparation adopted by the College of Physicians, and, as I apprehend, was the preparation used by Dr. *James* himself, with this exception, that he undoubtedly at first combined with it calomel, for which he afterwards substituted tartar emetic in the proportion of one grain to nineteen of his powder. The preparation of this favourite medicine being kept a secret from the world, and sold as a specific, the medical practitioners in Edinburgh endeavoured to make an imitation; and for this purpose, deflagrated seven or eight parts of nitre with four of crude antimony. This was found an efficacious preparation, but its operation was uncertain.

Dr. Cullen first suggested the idea, that in cases of fever, emetic tartar in solution, administered in nauseating doses, would be a good substitute for James's powder; that it would determine to the surface, relieve the

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the spasm in the extreme vessels, and thereby remove the proximate cause of the disease. Such was the theory; but, in fact, as it was found efficacious in the cure of fever, it became almost universally adopted.

Subsequent to this, Dr. Huxham prepared his antimonial wine, of which the following is the form:

R. Glass of antimony one ounce, infuse for six days
in 24 ounces of Madeira wine, and filtrate.

What the glass of antimony communicates to the wine is not yet discovered, for it was observed by the practitioners in France, that a cup formed of this wonderful substance, after having communicated virtue to such a quantity of wine as proved an emetic to a whole regiment, being accurately weighed, had not lost a single grain, and the *perpetual pill* is so little changed in its operation on the stomach as to be transmissible from generation to generation.

Tartarized antimony, in small doses, combined with contrayerva determines to the surface; combined with rhubarb, its operation is more immediately confined to the bowels.

ON the third day of the disease a clyster was administered, with a repetition of the tartarized antimony, antimonial wine and tincture of camphorated opium to promote the sweats. At the same time the Peruvian bark with serpentaria was given in considerable doses.

OBSERVATION III.

On the PERUVIAN BARK and VEGETABLE

ASTRINGENTS.

THE nature and operations of the Peruvian bark should be rightly understood, that this powerful medicine may be properly applied. Like the bark of the oak, of the *salix*, and of the *æschylus hippocastanum*, it is antiseptic and it is tonic. Dr. Eveling, who says nothing of the English oak, places the *cinchona*, that is, the Peruvian bark, when compared with eight other powerful medicines, in point of bitterness, at the bottom of his scale. As an antiseptic it stands first; as an astringent it comes after *salix*.

M. M. Coste and Willemet, who are equally silent on the virtues of the English oak, state the following barks as substitutes for the *cinchona*:

1. *Salix Alba*, or, White Willow.
2. *Salix Fragilis*, or, Crack Willow.
3. *Salix triandria*, or, Smooth Willow.

To be taken in doses of from one to two drams in powder.

4. *Æschylus hippocastanum*, or, Horse chestnut.

To be given in a dose of two drams.

5. *Prunus*

5. *Prunus pardus*, or, Bird's cherry.

Dose one dram.

6. *Prunus Spinosæ*, or, Blackthorn.

In doses of two drams for a decoction.

7. *Fraxinus excelsior*, or, Ash-tree.

8. *Geum urbanum*, or, Avens.

Of which the root is recommended.

We have seen, that the powers to be exerted by the *cinchona*, and to be applied in medicines, are antiseptic and astringent. Let us then consider the operation of our English bark, when applied as an antiseptic and astringent in the art of tanning, that we may distinctly comprehend its powers on the animal fibre even when deprived of life.

The tanner takes his hides, and having deprived them of their hair by lime, he puts them in a pit covered with water, and exposed to the influence of the sun and air. There we have every thing which can tend to promote the putrefactive ferment—air, heat, and moisture. How then does he preserve his hides from this process, which would be destructive of their texture? It is by the use of bark; the bark of our English oak, separated from the tree when it is full of sap. Here then we clearly see the antiseptic power of this bark.

The hides are continued in the pits for many months, where the fibres become more rigid and compact;

compact; and being at the same time somewhat shortened in their dimensions, the hide which was thin and flaccid becomes tough, strong, and thickened, but diminished a little in its length and breadth. This will give us an idea of the tonic power and astringency of bark; and I may add, that on the living fibre these powers have been proved, and that the decoction of the oak bark has been given with efficacy equal to that of the cinchona in the cure of intermittents.

With regard to the *æschylus hippocastanum*, Dr. Cusson, of Montpellier, finding it equal in efficacy to the Peruvian bark, has not only administered it in the cure of intermittents, but for restoring tone to debilitated patients, and for stopping the progress of gangrene.

From what has been said the student will observe, that the *cinchona* should be administered freely in cases of debility, and where it is required as a powerful antiseptic.

THE following day the bark was again ordered, with camphor, tincture of opium, and Hoffman's ether. By these medicines every symptom was *aggravated*, more especially a violent and distressing spasm in the cæcum, which had continued, with short intervals of respite, for two days, and for which these *antispasmodic* were administered.

OBSERVATION IV.

On the Use of OPIUM, CAMPHOR, and ETHER.

THE nature and effects of *opium* have been too little understood. It may be used either as a cordial reviving stimulant, or a powerful sedative, according to the manner and quantity in which it is administered.

As a stimulant, it stands at the head of all the stimuli; being of the same nature, but much more powerful than wine.

It is well known, that whilst Christians get drunk with wine, true Mussulmen, being forbid to touch the produce of the grape, get drunk with opium, which ranks foremost among the intoxicating powers.

It is equally known, that wine quickens the pulse, raises the spirits, increases vigour, and gives more than common animation for the time; but no sooner are the fumes of the intoxicating drink exhausted, than the drunkard becomes weak, enervated, and depressed in spirits. Here we distinctly see the stimulant and the sedative power of wine; and the same may be observed of opium. But if wine be given in small quantities, and administered only as occasion may require; or, when the sedative power has succeeded to the stimulant, let it then
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be repeated as a generous cordial in cases of debility, and the good effects will be visible to every eye. The same precisely may be said of opium.

In larger doses opium nauseates and is cathartic; but wine, in sufficient quantity, acts first as an emetic.

Camphor has some of the same properties, being, when exhibited in small doses, diaphoretic, cordial, antispasmodic, and moderately soporific. In larger doses it is diuretic, cathartic, and emetic. In more considerable quantity it produces hickup, delirious raving, deep sleep, epileptic convulsions, death.

What has been said of *wine*, *opium*, and *camphor*, applies in its degree to *ether*, and to every substance which contains inflammable air, even the common articles of diet; insomuch, that after long fasting a person will be intoxicated by a small portion of animal food, and effectually destroyed by a full meal of meat.

From what has been said, it is evident, that in *Synocha* all these stimulants are contraindicated as most injurious; whereas, in *Typhus*, properly administered, they must produce the best effects, because in cases of indirect debility alone they prove *anodyne*, *sedative*, *antispasmodic*, and *narcotic*.

WHEN these stimulants had failed to give relief, *two glysters* were administered; which soon produced a copious evacuation, and removed the distressing spasm; but, as the fever was much increased by the bark, opium, camphor, and ether, the next day, being the fifth of the disease, these were omitted, and in their place were substituted contrayerva, nitre, rhubarb, and tartarized antimony, to quench the fire which had been raised.

On the seventh day of the disease towards evening a critical sweat took place, which lasted 14 hours. The pulse sunk down to 80. But the tongue continued foul. The day following the decoction and tincture of the bark, with salt of wormwood draughts, and syrup of althea, were given every third hour; to which were added vitriolic acid, and compound spirit of lavender.

On the ninth day a profuse and oily sweat broke out, and continued for 12 hours. Powder and decoction of bark, with columbo root, rhubarb, and aromatic powder, were given every third hour, and repeated the succeeding days, with the addition of Virginian snake root.

During the operation of these medicines, *the bowels were gradually cleared*, and, in the same proportion, the tongue became moist and clean.

The fifth, the seventh, the ninth, and the eleventh days, considerable remissions of fever were perceived. But on the FOURTEENTH DAY of the disease, the heat became moderate, the pulse weak, small, and frequent; the senses were impaired, and the prostration of strength was remarkably increased.

This change rapidly took place, after nine in the morning, precisely at the hour in which the cold chill had begun. From this time *light* became intolerable; but, with regard to sounds, fortunately, as the deafness, which took place on
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the first day of the disease, continued in some measure, they were not distressing.

The student must particularly notice the change which happens in such circumstances, not merely in the pulse and in the senses, but also in the mind; because, *the temper* then becomes impatient of the least contradiction or delay.

During the progress of the disease, our patient had taken for nourishment sago, with calves-foot jelly, broth, and apples made into a paste. In proportion as his bowels were evacuated, his appetite returned. But *now* he complained, that sago and jelly appeared to him like water poured into the ocean, without satisfying in the least degree a ravenous appetite, and craving for more substantial food.

Whilst, however, he was taking sago and jelly in considerable quantities, he laughed incessantly like one *hysterical*, and remarked, that, in the rapidity of its vibrations, his diaphragm resembled the sails of a ship when, having missed her stays, they are fluttering in the wind. When, however, he had picked the two small pinions of a chicken, his appetite was satisfied, and he fell into a state of calm *reposé*. Yet whilst sleep took possession of his limbs, he retained his consciousness, and was sensible of every thing that passed. Previous to his awaking from this state, he perceived spasmodic twitchings, first in his limbs, then in the trunk, and lastly in his stomach; after which he became perfectly awake, and instantly called with eagerness for food.

The occasional cause of these spasmodic twitchings will be explained when I proceed to hysteria.

He remarked, that on the first approach of synocha, and for some of the succeeding nights, he was distressed with the most frightful *dreams*. But *in proportion as the alimentary canal was cleansed*, his sleep was more refreshing and

less disturbed, till at length he slept soundly and without a dream.

The appetite now became voracious, and, for want of some one to guide him, our patient eat two chickens, and drank nearly two bottles of Madeira, in the space of 24 hours. When he began to chew, such was his debility, that his under lip and cheeks were affected almost incessantly with spasms; in consequence of which, they were at every moment drawn between his teeth. But wine soon removed the spasms, and enabled him to eat without this inconvenience. Hence it was that the quantity was so much increased.

On the fifteenth and the two following days of the disease, the bark and serpentaria were continued as before, with opium in considerable doses.

About this time of the disease, he had a remarkable symptom, frequently observed and complained of by the sick themselves, but not noticed in the writings of medical practitioners.

Whenever he closed his eyes in the middle of the day, he seemed to see instantly a multitude of figures, some minute, and juvenile, dancing at a distance; others large, aged, hideous in their appearance, nigh at hand, and employed in making faces at him; but all vanishing as often as he opened his eyes again.

This continued for some days without any other symptom of delirium.

Here let us pause to make some observations.

OBSERVATION V.

On LIGHT *and* HEAT.

THE design being now to strengthen, every thing which could debilitate or exhaust in any degree the vital energy, and thereby increase the irritability of the system, was to be removed.

Of all the debilitating powers, in cases of extreme irritability, none is more distressing than *light*. This is a matter of experience; and every one, who has passed through a nervous fever, can bear testimony to the propriety of this observation.

Such in this patient was the sensibility of the optic nerve, in consequence of extreme debility, that, when his door was shut and his windows perfectly darkened, he could, merely by the light descending from a lofty chimney, discern a pin lying on the floor in the most distant corner of his room.

From this distressing sensibility it is, that people of irritable fibres have an inclination to exclude the light.

Poulterers, who never reason, and who are not therefore liable to be misguided by speculative systems, have discovered by experience, that the most expeditious way to fatten poultry is to keep them in the dark.

The connection between *light* and *heat* is too remarkable to escape the notice of those who are inhabitants of warm climates. Hence, to cool their apartments, they not only sprinkle water, but they carefully exclude the light.

It is not my intention to suggest the idea of identity between the elements of light and heat; although when reflected from a polished surface, they are governed by the same laws; nor, on the other hand, am I able to demonstrate the essential differences between them.

But certain 'it is, that in given circumstances heat is constantly in proportion to the light; and I have had occasion to remark in Spain, that by excluding light, during the sultry heats of a meridian sun, they enjoy the most refreshing coolness. This I have particularly noticed in my travels, when I mentioned the spacious, yet dark galleries, which run through the whole extent of the Jesuits' College at Salamanca.

Even on the lofty summits of the Alps, when the cooling process of evaporation is prevented, the same law subsists, and the heat is in proportion to the light. In confirmation of this truth, we have the beautiful experiments of M. de Saussure, who, having lined a close deal box with black cork, and for a door placed three plates of glass at the distance of an inch and an half from each other, exposed his thermometers to the sun on the top of Cramont,
soon

soon after noon, of the 16th of July; when that which he confined within the box stood at 70 degrees; whilst one open, but hanging against black cork, was at 21 degrees; and a third, suspended freely in the air, was at 5 degrees.

IN the case of our patient, to exclude the light was easy; but to diminish heat, it was found expedient, even at this advanced season of the year, that the room should receive ventilation from windows which opened to the north, and that those to the south should be covered externally with mats, which were sprinkled, from time to time, with water to promote evaporation, and thereby to absorb the heat.

But as the heat still continued to distress, although it did not rise above 56 degrees of Fahrenheit's thermometer; the ceiling and the floor were sprinkled, from time to time, with vinegar, where it appeared, till evaporation had taken place, like the finest dew.

By these operations the thermometer in the patient's room stood commonly at 52 degrees. This effect might have been obtained by sprinkling the room with water; but there being evident symptoms of putridity, the preference was given to vinegar, as a powerful antiseptic. The instrument made use of for this purpose was the hearth-brush; and the quantity of vinegar consumed was six gallons in twelve days.

OBSERVATION VI.

On RESPIRATION *and* VITAL AIR.

BESIDES the beneficial effect of cold, another was derived from this operation, which was, to *oxygenate the air* and render it more fit for respiration. Every chemist knows, that the atmospheric air consists of two parts; of which one is called *vital*, because it contributes to life; the other *azotic*, because, being respired by animals, it produces death. It is well known, that when these portions are separated, and confined within different jars, a mouse will live a considerable time in *one*, being lively, brisk, and active; whilst in the *other*, he soon languishes and dies. In the *vital air* a candle burns with a most vivid flame, but in *azotic air* it is instantly extinguished. In *vital air* iron kindles like a match, and is melted with rapidity, exhibiting as it consumes a lustre scarcely inferior to the splendor of the mid-day sun. This part, therefore, as contributing to life and flame, is with the utmost propriety denominated VITAL AIR.

Vinegar contains this in abundance, and parts from it readily.

Being, therefore, sprinkled like dew upon the ceiling, the evaporation corrected that part of the
air,

air, which had been vitiated by the breathing of the patient, and rendered it again fit for respiration.

It moreover made respiration pleasant, relieved the oppression of his chest, and enabled him to breathe freely through the nostrils without the assistance of the mouth, which he could not do before the vinegar was sprinkled.

It greatly increased, at the same time, his appetite, and quickened his digestion.

I have had frequent opportunities of remarking a kind of balance between *respiration* and *digestion*. In the case of our patient, it was too evident to escape the observation even of his nurses. When the stomach was oppressed, respiration laboured; and when the lungs were plentifully supplied with vital air, the superabundant quantity of food no longer was a burthen.

I am happy to find my ideas on this subject confirmed, not only by Dr. THORNTON, to whom I first communicated them, but by a correspondence between two of the most ingenious medical practitioners and chemists of the age, Dr. WITHERING and Dr. BEDDOES. The former, writing to the latter, says, “ The experiments you wish for on this subject have
“ in part been made. The late Mr. Spalding, who
“ did so much in improving and using the diving-
“ bell, was a man of nice observation, and had he
“ not fallen a sacrifice to the negligence of drunken
“ attendants, would have thrown much additional
“ light upon more than one branch of science. He
“ particularly

“ particularly informed me, that when he had eaten
“ animal food, or drank fomented liquors, he con-
“ sumed the air in the bell much faster, than when
“ he lived upon vegetables, and drank only water.
“ Many repeated trials had so convinced him of
“ this, that he constantly abstained from the former
“ diet whilst engaged in diving.”

To this correspondence between the stomach and lungs, between respiration and digestion, the changes to be noticed in the appetite, according to circumstances of health and sickness, or the season of the year, may be perhaps attributed.

In the inflammatory fever; in warm climates, and during the sultry season, when we are overwhelmed with heat, we have little inclination for animal food; we covet vegetables, with acids, and acescent fruits: but in winter we have a strong desire for those substances, which abound with hydrogen, and have little propensity to take acescent food.

If the ideas I have ventured to suggest are agreeable to truth, the reason for this change of appetite will be easily explained.

The *heat* which is generated in the system appears to bear some proportion to the quantity of *oxygen air* absorbed in respiration by the blood. But animal food, and all the articles of diet, which abound with hydrogen, evidently contribute to increase the vital heat. Does it not therefore seem probable, that this may be, by disposing the lungs to decompose a greater quantity of common air?

If vegetable diet, with acids and acedcent fruits, cool the system; is it not from the same sympathy between the stomach and the lungs?

Thirst is subject to the same laws, being quenched sometimes, as in Synocha, by acids; whilst in other circumstances, as in cases of debility, it is satiated by wine and brandy.

As to those kinds of thirst, excited either by acrimony in the system, or by superabundant evacuations, they observe a different law, and simply call for diluents.

When animal food and wine have been received into the stomach, no sooner is the *digestive process* begun, even before any portion is introduced into the circulating fluids, than the action of the heart is increased, and the pulse is quickened. But the same effect is not observed from vegetables.

This might be attributed to a sympathy between the heart and stomach; but as I cannot imagine, in the case before us, any utility arising from such a consent of parts, I am rather inclined to suppose it may arise from the sympathy already stated between the stomach and the lungs, in which case the frequency of the pulse will follow as a necessary consequence of this increase of oxygen air by respiration.

OBSERVATION VII.

On Digestion.

BOERHAAVE, neither satisfied with the system of digestion in the human stomach by heat, as suggested by Galen, and adopted by his followers; nor yet better pleased with attributing this process to the vital energy of the soul residing in the stomach, as conceived by the fertile imagination of Van Helmont; invented a system of his own, in which he attributes the digestion of our food partly to fermentation, but principally to triture, pressure, and powerful quassation. He describes the rugæ of the stomach as grinding the more solid parts of the aliment; and, to assist in this process, he calls in the aid of its external coat, with the diaphragm, and the numerous muscles of the abdomen. Not satisfied with these, he takes into his account the violent pulsations of the subjacent aorta, with the vibrations of innumerable surrounding arteries, which he estimates at no less than three thousand six hundred pulsations in the hour.

This distinguished anatomist reasoned by analogy, and took particular notice of the ostrich, which he had observed to swallow pieces of iron and of glass, evidently for the purpose of triture, because the sound of grinding was perceptible to those who listened.

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In the granivorous birds he had remarked, beside the crop, furnished with salivary glands to mollify their food, a gizzard, or second stomach, provided with strong muscles to triturate the grain; and the avidity with which they swallow gravel to assist the operation had not escaped his notice.

Having examined the structure of a lobster, he saw at the mouth of the stomach a curious mechanism, three teeth, of which one, moved by a strong muscle, triturates the food against the other two. In the larger crawfish of the sea, he might have noticed a structure somewhat different, where, to answer the same intentions, instead of three teeth, we observe a pestle supplied with a strong muscle and placed between two mortars.

This philosopher examined attentively the ruminating animals, such as the sheep and cow, in which he remarked, that the food, after having been conveyed into one stomach, is thrown up again to be triturated before it is returned into a second.

No wonder, then, that this great mechanic on the subject of digestion had mechanical ideas.

Succeeding physiologists were convinced, that the digestive process was conducted by fermentation only, and this they supposed to be promoted by heat and moisture, as most undoubtedly would happen, were it not for the presence of a fluid whose property it is to prevent that process.

A true notion of digestion never occurred to human thought, till *John Hunter* had tried his experiments,

ments, and Dr. *Stevens* had rendered the subject more familiar to the mind, by his most judicious observations on the stone-eater, when he visited the metropolis of Scotland.

The former, after having caused his dogs to swallow various kinds of food, both in a fresh and in a putrid state, opened their stomachs at different periods from the time of deglutition.

The latter confined the substances to be swallowed by the man within small silver spheres, which prevented trituration, and, being perforated, readily admitted the gastric juice; but, as the stomach could not be laid open, emetics, after a sufficient time had been allotted for the process of digestion, were employed to bring those spheres to light.

As the result of their experiments, these gentlemen conclude, that the gastric juice is the proper solvent of our food; and their inductions have been confirmed by the subsequent experiments of the Abbé Spalanzani.

It appears, then, that the teeth are to triturate the food, and that the salivary glands supply it with a peculiar fluid, whose property is, not merely to moisten it and render it fit for deglutition, but to prevent both the acetous and the putrefactive fermentation; beside which, the saliva is detergent, and acts as a moderate cathartic.

The *gastric juice* answers the same intention of impeding fermentation, insomuch, that a piece of putrid flesh, being thrown into the stomach of a dog,
lost

lost its putridity. But independent of this property it has been proved to be a powerful solvent, both of animal and vegetable substances, more especially of the former, yet upon this condition, that they be first deprived of life.

The *pancreatic juice* supplies any occasional defect in the salivary glands, being perfectly similar in its nature to saliva: and it may be observed, that in proportion as the loaded stomach presses on *the spleen*, blood is emitted from that viscus to supply the pancreas.

The *bile*, which enters the duodenum with the pancreatic juice, is not only detergent and cathartic, but antiseptic also.

Such is the well known process of digestion: but we cannot leave the matter here.

The attentive observer may take notice, as already stated, that there is a certain balance between the quantity of vital air received into the lungs, and of food which can be digested in the stomach; and will see one reason, why cold air, every kind of exercise, and even sailing, increase the appetite; and why men, who are oppressed with food, pant for breath; and why, in a close room, when they are confined within the curtains of a bed, where the air is vitiated by passing frequently through their lungs, they open their mouths wide to breathe, and therefore why they snore.

I have had occasion to converse with miners in Cornwall, who had been almost deprived of life by

mephitic air, and have been informed by them, that on reviving they have constantly been seized with nausea, and that commonly the stomach has rejected its contents crude.

OBSERVATION VII.

On the RESPIRATION *of* HYDROGEN AIR.

IN cases of debility, unless the quantities of food exhibited are small, well chewed, and not given till the appetite is keen, flatulence will be the consequence; and where animal substances and fermented liquors constitute the principal portion of the aliment, inflammable air will be extricated and discharged in considerable quantities.

Supposing, then, the patient to be confined to bed, this, being twelve times lighter than atmospheric air, will constantly ascend, and, from the situation of the patient, will be inspired as it passes.

The effect of the hydrogen, that is, of inflammable, air, as a sedative, when received into the lungs, is well known to modern chemists; and will be manifest to any one, who confines a mouse, only for a short period, in a jar replete with it; for he quickly dies.

Having made these observations, let us return to our patient.

ON the eighteenth day of the disease, his friend Dr. THORNTON, a very able and ingenious physician, came from London to visit him.

Upon examination he perceived, that the pulse was feeble, rapid, fluttering; that the tongue was black and furred; the countenance dark and sunk; that there was much restlessness, and some delirium. He observed white specks in the fauces; that the room, notwithstanding the vinegar and ventilation, was offensive, and the breath extremely putrid. In this situation, the patient told him, "That he felt like a watch, when the chain is broke; that the wheels moved quick, but had only a short time to run."

Dr. THORNTON saw very clearly, that, under the quartan type, no crisis was to be expected for three days.

In these distressing circumstances, he ordered the quantity of wine to be increased, as occasion might require, to a quart, or more if needful, in four and twenty hours; leaving a commission with the nurse, to give him a glass-full whenever she perceived him sinking.

Instead of half a dram of bark, every three hours, which the patient had been taking, he ordered two scruples to be administered every two hours, with its proportion of the wine; and that, during the intervals, food in different forms should be freely given. Of these he thought the subsequent were the most agreeable, and least subject to putridity:

No. I.

Fresh butter-milk.

No. II.

Take a pint of good butter-milk; leave it to be sour; then put on it a quart of warm new milk in a wooden bowl, in the bottom of which are holes large enough to transmit the whey, but not the butter-milk. In twelve hours a rich subacid curd of easy digestion will remain.

1D 2

No III.

No. III.

Leave a quart of new milk three or four days in a bowl till it becomes a jelly.

No. IV.

Put skim milk into a deep wooden vessel, which must have a peg at the bottom. Place this in a vessel of boiling water, and there leave it till the milk coagulates; then draw off the acid whey, restore the peg, and surround it once more with boiling water. At the end of twenty-four hours draw off more whey, and beat the curd with a wooden stick. It is then fit for use, and may be mixed with sugar.

No. V.

In a basin, or a soup plate, containing half a pint of water moderately warm, put thirty or forty snails, previously stript of their shells and washed; there let them discharge their slime.

To half a pint of this slime add a quarter of a pint of hartshorn jelly, with the whites of four eggs. Let these be beat up; then add one glass of Madeira wine or sherry, and the juice of half a lemon, with a little lemon-peel and cinnamon.

No. VI.

Infuse oatmeal in a wooden vessel till it ferments, and begins to acquire some degree of acidity. Strain off the liquor from the oatmeal, and evaporate by boiling to the consistence of a jelly; this may be eaten mixed with white wine and sugar.

These with boiled mutton, tender and full of juice, were the chief articles of diet.

OBSERVATION VIII.

On STIMULANTS.

IN regulating the quantity of stimulating medicines and of food, in dividing these into small portions to be given at the distance of short periods, Dr. THORNTON anticipated their sedative effect, and uniformly supported the vital powers. Thus the prudent gardener, under the guidance of his thermometer, supplies fuel to his stove, and preserves his hot-house at a regular and certain temperature, without suffering the heat to be too much diminished, or violently and suddenly increased.

In the human frame, *the pulse* is this thermometer.

OBSERVATION IX.

On the PULSE.

WITHOUT understanding the *pulse* no one can be a good physician.

That the pulsation of the artery arises principally from the action of the heart is evident, because, as you increase the action of the latter, you increase in the same proportion the pulsation of the former.

But the actions of the heart, and, therefore, the pulsation of the arteries, being caused by stimulus, bear proportion to the irritation, which again depends on, both the quantity of stimulus applied, and the degree of irritability in the system; so that by increasing either, you equally excite and quicken the action of the heart.

The stimulus of the blood bears proportion to its quantity, its velocity, and its degree of oxygenation, that is, to the quantity of oxygen which in a given time it can communicate to the irritable fibre.

Hence it is, that patients, who breathe a vitiated air, have a sluggish pulse; whilst they, who either inspire air more copiously charged with the vital principle, or who from disease derive too much oxygen air from the atmosphere, have always a quick pulse.

The former, as well observed by Dr. BEDDOES, may be seen in scurvy; the latter in phthisis.

I have said, that the action of the heart depends on its irritability; but then it must be remembered, that irritability bears proportion to debility.

In making observations on the pulse we have to notice,

1. Its frequency.
2. Its strength.
3. Its hardness.
4. Its fulness.
5. Its regularity.

1. The *frequency* is governed not merely by the stimulus of the blood, and the irritability of the heart, but by the quantity of blood to be kept in motion.

All these circumstances must be considered. Thus in *Synocha* we have some degree of irritation to quicken the circulation; but as the vital stream is undiminished in quantity, the celerity is moderate, seldom exceeding 100 or 110: whereas in *Typhus*, with increased irritability of the arterial system and diminished quantity of blood, it rises to 150 or 200 pulsations in a minute.

In a state of health, in adults, we may reckon it from 60 to 70; but in hypochondriasis, it is often observed as low as 50, or even 40.

The irritability of the heart is diminished by age, by sleep, by opium, and by sympathy with the alimentary canal when it is oppressed by viscid mucus or relaxed by grief.

Hence indolence and poverty of diet sink the pulse.

2. The *strength* depends on the powers of life; for where debility prevails it will be manifest in the arterial system by the weakness of the pulse.

3. The *hardness* of the pulse marks resistance in the capillary arteries, arising either from spasmodic stricture or from density of blood. Uncommon softness of the pulse denotes relaxation in the arteries, with penury of blood.

4. The *fulness* indicates the quantity of blood thrown out at each contraction of the heart, which is regulated by the degrees of irritability ; for when this is morbidly increased the ventricles contract before they are replenished.

5. The *regularity* is principally governed by the same cause, and where the pulse, as in the progress of Typhus, of Hysteria, and of other diseases, fails in regularity, we must, independent of organic affections of the heart, attribute this to morbid irritability.

From what has been said we may understand, why in *Synocha* the pulse is full, hard, strong but moderate in frequency ; and why in *Typhus* it is small, weak, quick, and in the worst state of that disease irregular.

Hence also we may comprehend, why the rapid pulse in *Typhus* and *Hysteria* is rendered slower, as well as stronger, by animal food, wine, opium, and the Peruvian bark,

ON Monday, the nineteenth day of the disease, towards evening every bad symptom was increased. Singultus, with subultus tendinum, came on, and whenever he awoke from sleep, it was with spasmodic twitchings, first of the lower extremities, afterwards of the whole body, followed by a short hecking cough.

These symptoms evidently arose from the stimulus of the gastric juice on the living fibres, when the digestion was completed, and the stomach was void of food ; for they instantly ceased when he began to eat.

Tuesday, September the 24th, being the TWENTIETH DAY of the disease, at five in the morning the pulse was fluttering, and so rapid as not to be counted ; and the patient feeling himself sinking into the arms of death, begged with eagerness for wine.

Two full glasses of Madeira were given him with good effect. At seven he began to sink again ; no moisture was any were perceptible ; and he was seized with vomiting ; but warm wine and water soon gave relief.

At ten his countenance was sunk and black ; yet his lower extremities were warm. His urine was *pale*, and its flow considerable. Plenty of Madeira wine was given ; and his pulse by degrees became soft, though feeble, and not more than 80 in a minute.

At twelve *his hearing was perfectly restored* ; light, from being more tolerable, ceased to be offensive ; his tongue was clean ; breathing free ; skin moist ; pulse 78, soft, full, regular. He *slept profoundly* and almost *incessantly*, excepting when a keen sense of hunger compelled him to ask for food.

During the day he took much Madeira wine, and nourishment, by which the pulse diminished in the *number*, but increased continually in the *strength* of its vibrations.

Wednesday 25th, HE WAS FREE FROM FEVER, and nothing now remained but hysteric affections.

Under Hysteria, when I shall proceed to treat of it, this case will be referred to ; because *Typhus* and *Hysteria* throw a considerable light upon each other, such as may direct our practice in the treatment of them both.

WHEN Dr. THORNTON left this patient in a state of convalescence, from the frequent conversations he had had with me on fever, he resolved early upon trying to the full extent the *evacuant* and *antiseptic* plan of cure.

Fortunately, upon his arrival in town, he was called in for his advice, respecting two children labouring under Typhus fever. As the eldest child appeared to be in the greatest danger, with a becoming diffidence of *a new theory* introducing *a new practice*, he desired the father to allow him to accept her only as his patient, and that the apothecary should go on with the youngest. He gave instantly an emetic of tartarized antimony and ipecacuanha; and, after the operation was fully over, and a little nourishment got down, supporting the patient all the while with wine, he followed it up with rhubarb and tartarized kali. In the evening, during the night, and on the next day, he ordered, at regular intervals, an infusion of bark and port wine, impregnated with *fixed air*; and her sole drink was *the aerial acid water* and *tamarinds*. By this treatment she was speedily restored to health, and these *antiseptic medicines* were gradually left off.

Dr. THORNTON then went into the country to see some particular friends, and on his return he hastened to visit these children. He found his little patient

tient in perfect health, and blooming; but the situation of the other child was far different. As he entered the house, the father informed him, that his child was at the point of death, and all he could hope from him now was, in some degree, to palliate her sufferings. For three days, and as many nights, every thing taken into her stomach had been rejected. During this time she had had no sleep. Much watery fluid passed from her bowels, and she had an almost incessant desire to go to stool. The two last nights glysters of mutton broth had been administered. When Dr. THORNTON entered the room she had just been convulsed, was speechless, and gasping for breath. Her eyes were fixed and sunk, and surrounded with a circle of a darkish colour. The muscles of the face still quivered. He immediately opened the window, for the room had but one, and ordered the fire to be put out. Some portion of the flannels, with which she was loaded, was also taken off. The room was then darkened, and filled with fine sprays of vinegar, which, by absorbing the heat of the room, cooled the chamber, and became aeriform. Factitious oxygen air was superadded, and, to the astonishment of the persons who were present*, she seemed instantly revived, and her speech, after a few minutes, returned to her. As she

* Besides the nurse, there were at that time in the room Mrs. Gengel, who lives in Cooper-street, Westminster; and Mrs. Murdoch, who lives in Windmill-street.

seemed exhausted for want of food, Dr. THORNTON ordered her the white of an egg, which of all nutritious substances he judged the least subject to corruption, mixing it with white wine, warm water, cinnamon, and a little lemon juice; he gave her very small quantities at a time, and finding it remained, he soon after tried the bark and red wine, directing the same judicious manner of administration, namely, to stop whenever the smallest inclination to vomiting came on. She had water impregnated with *fixed air* to drink, and was recovering fast under this treatment, when some officious ignorant nurse interfered, and the fire was renewed in the apartment, and the bark left off for barley water; in consequence of which, the child was again seized with similar convulsions, and became speechless: but in less than five minutes she was restored as before, by breathing an oxygenated air. In the course of a few days, under this tonic and antiseptic treatment, she was out of danger, and able to leave her bed.

SECTION IV.

THE PROXIMATE CAUSE OF FEVER.

IF it is now, as I presume, universally allowed, that neither lentor in the extreme vessels, nor morbid matter in the system to be concocted and expelled,

pelled, is the proximate cause of fever ; what in the place of these shall we substitute, as the foundation of rational indications and a successful practice ?

Shall we borrow from our modern Hippocrates the idea of atony and spasm ? With the utmost deference to his superior talents, I must beg leave to differ from him ; and, without repeating the arguments, by which he has recommended his system to the attention of the world, I must observe, that fever continues after the spasm of the extreme vessels, as frequently appears by copious sweating, is relieved ; whereas, when we seek a proximate cause, we must find something, which being once removed, the disorder soon ceases.

For the proximate cause of fever, therefore, I would assign the morbidly increased irritability of the heart and arteries ; and this with either strong marks of vascular excitement, or with symptoms of nervous weakness and distress : the former constituting *Synocha*, and the latter *Typhus*. In *Synocha* we have, indeed, a frequent pulse, but it is full, strong, and hard ; whereas in *Typhus* the pulse is quick, small, and feeble ; whilst, at the same time, the disease is attended with every symptom of debility.

If it be inquired, what produces the increased irritability of the heart and arteries in fever, I shall not hesitate to offer another conjecture to the world ; happy, however, in not being the first publicly to hazard that opinion, although it has been deeply impressed upon my mind for thirty years. It ap-
4
pears

pears to me, that the increased irritability of the heart and arteries in fever arises from consent of parts and the stimulus of acid bile, indigested food, viscid and corrupted mucus, worms, virus, and other stimuli in *the stomach and first passages*; because in proportion as these have been removed, fever has been relieved, either ceasing altogether, or being made to intermit, or at least rendered mild and tractable, whilst it has proceeded in its destined course.

Should we in Typhus suffer putrescent colluvies to stagnate in the alimentary canal, we shall have, then, no longer what is called a *nervous*, but a *putrid fever*.

I am ready to allow with Dr. CULLEN, that for the occasional cause of fever, we must look to sedative powers, such as contagion, specific effluvia, putrid exhalations, driving fogs, and stagnant vapors, fear, and the vicissitudes of heat and cold.

Debility, whether arising from heat, intemperance, fatigue, previous disorders, inanition, the operation of medicine, or any other source, may be justly considered as the predisponent cause. But, as for the proximate cause, no other, in my opinion, can with justice be assigned, than the one which I have already stated.

Dr. CULLEN in his *Materia Medica* has a most interesting observation.

He remarks, that some kinds of fish, such as eels, salmon, herrings, and, in peculiar constitutions, muscles,

cles, or even lobsters, independent of their putrefcency, give a singular irritation to the system, and, during their digestion in the stomach, occasion a considerable efflorescence on the skin; sometimes partial, at other times over the whole body; sometimes with a considerable febrile disorder, but at other times with very little. It is seldom of long duration, and commonly ceases when the matter is entirely digested and passed out of the stomach. He adds: "I have had it in some cases immediately removed by bringing up the contents of the stomach; by which it appears, that this phænomenon depends upon an operation exerted in the stomach, and not upon any matters being mixed with the blood."

Whosoever will take the pains to consult Sir John Pringle, on the diseases of the army, will find my ideas respecting the *alimentary canal* confirmed; and may observe, moreover, a connection clearly marked, such as can arise only from identity of cause, between flux and fever; for, it appears, that all who, in similar circumstances, were attacked by diarrhœa, escaped the autumnal fever of the camp; and that in cases of fever, whenever a diarrhœa supervened, the fever vanished, frequently, however, to return when the diarrhœa ceased. In addition to this remark I must observe, that any one, who is conversant with practical writers, may collect from their united observations, that fever, whatsoever type
it

it may assume, depends upon one common cause; because he will remark, that the various species run into each other. The continued are apt to remit and intermit; whilst intermittents, by bad management, become continued fever.

The first effect of viscid mucus in the alimentary canal is sedative, as appears by the slow and feeble pulse, languor and depression of spirits, coldness of the extremities, costiveness and deficiency of perspiration, which it constantly produces.

But as the retention of perspirable matter proves a burthen to the system, therefore the first effort of nature to relieve herself appears to be, by exciting the action of the kidneys, and limpid urine flows in remarkable abundance.

Most of the enumerated symptoms may continue for years; as in the case of *hypochondriasis*; or, being suffered to increase, the disease may terminate in *melancholia*.

The sedative effects of bile, when absorbed into the system, are still more remarkable, as appears in all the functions, natural, animal, and vital. The pulse is languid in the extreme; the spirits are depressed; drowsiness, with prostration of strength ensue; the bowels are constipated; the urine is deficient; and the perspiration is obstructed.

Nature, in such circumstances, appears to be retreating before some powerful invader; but when the sedative powers are violent and suddenly applied,

plied, she makes strong efforts to relieve herself, and the gates of this tumultuous city are barred, whilst she is assembling all her forces to expel the enemy; for, during the paroxysm of fever, the pores are strongly closed, whilst the vital energy is evidently concentrated and collected in the heart, which propels the blood with renewed vigor through the arterial system in its whole extent.

In the case of *intermittents* a copious sweat succeeds. But as the effort is not confined to the external surface of the body; if, at the same time, the mucous follicles, with the exhaling arteries, pour forth their copious streams in the intestinal canal, a diarrhœa follows, and this frequently puts a period to the original disease.

When nature fails in this first effort, she reposes, according to her usual practice in other cases, to recruit her strength, and we have either 1. a Quotidian, 2. a Tertian, or 3. a Quartan, according to the degree of vigour in the system.

These may degenerate and assume the continued form; yet, when thus modified, they retain somewhat of their original type, as marked by their quotidian, tertian, or quartan exacerbations, which are only renewed efforts to produce a termination of the fever.

Thus commonly during the first week they conform to the quotidian, during the second to the tertian, and after that to the quartan periods; at first

with symptoms of strong vascular excitements, and at last with evident tokens of extreme debility. Such is the progress of *Synocha*.

But, when the vital energy is weak, the efforts of nature will be feeble, and the patient will complain of frequent chills with flushings of heat; listlessness; fatigue; heaviness and dejection of spirits; disrelish of food; nausea; restlessness; anxiety; and disturbed sleep: the pulse will be quick, weak, unequal, fluttering; the urine pale or limpid; and the thirst will be moderate. These symptoms may creep on for many days, but will make way for those that are more urgent, when faintness, starting of the tendons, stupor, delirium, with distressing marks of speedy dissolution, leave no room to doubt respecting the diagnosis; for the fever is evidently *Typhus*.

In fever we constantly inspect the tongue as a faithful index of the alimentary canal. When that is dry and covered thick with mucus, the attendant deficiency of appetite clearly indicates a similar condition of the stomach.

When the tongue becomes clean and moist; when the saliva flows freely and is abundant, a keen appetite returns, and sufficiently evinces, that the gastric juice is neither deficient in itself, nor prevented by a viscid mucus from exerting its stimulating power on the stomach.

SECTION IV.

INDICATIONS OF CURE IN SYNOCHÆ.

FROM what has been said, I trust it will be clear to the student, that to prevent or to cure a *Synocha*; his first intention must be to cleanse the alimentary canal; and, from the experience of more than thirty years, I can venture to assure him, that by this means the fire may be quickly extinguished in the first passages before it has had time to spread; and the fever may be either stifled in its birth, shortened in its duration, or at least, in its type, rendered more benign.

For this purpose, agreeable to nature's first effort for relief, an emetic, or repeated emetics, should be administered with the utmost expedition; after which a mercurial pill should be thrown into the bowels at night, to be carried off by rhubarb and senna the succeeding morning.

Having cleansed the alimentary canal, the bark may be safely given in sufficient quantity to answer the second intention, which is, to restore the tone, and to invigorate the system. Without this, ill digested, acrid, and irritating matters, would be again collected, and prove the fomes of fresh fever.

Should you, however, fail in this first attempt, you must still proceed to cleanse by antimonials, that

you may speedily prepare the bowels for the reception of Peruvian bark.

Should you neglect to cleanse, and thereby suffer a *Synocha* to continue, and to exhaust the powers of life, I know not how you are to avoid a *Typhus*; because the fever, which in the beginning observes clearly the *quotidian* type, with strong action in the vascular system, passing through the *tertian*, may assume after the eleventh day, if not more rapidly, the *quartan* form, with its usual symptoms of debility.

Stationed in a country parish, my practice has been confined chiefly to the rigid fibre of laborious peasants; and, among those of them who made an early application for assistance, I never suffered fever to continue.

I have one aged servant, who in the thirty years, during which he has lived with me, has frequently been attacked by fever. I have often found him in the chimney-corner, with a dry and parched skin; foul tongue; pulse frequent, hard, and strong; no appetite; thirsty; costive: yet the very first emetic, discharging a quantity of bile, of phlegm, and of indigested food, assisted by a mercurial pill at night, and followed by rhubarb with senna in the morning, has sent him after the second day to work, without even the use of the Peruvian bark.

In case of costiveness and accumulation of faeces in the last of the intestines, a clyster gives relief, without the weakness commonly induced by the operation of more powerful cathartics.

During

During the progress of a Synocha, animal food is inadmissible ; spices, spirits, and fermented liquors, must be forbid. Ripe fruits and vegetables may be freely used, and the craving for subacid liquors must be indulged. Lemonade is good : the common saline draft is excellent. It is composed of lemon juice half an ounce, salt of wormwood one scruple, nutmeg water and simple syrup of each one dram, with two or three ounces of distilled water. This may be taken every three or four hours, and in the intervals vinegar and water with honey may be used.

When *heat* is accumulated in the system either by fever, by strong exercise, or by a scorching sun, nature cries aloud for acids ; and to those who have turned their mind to chemistry, the reason for this strong desire is obvious.

They know that *animal heat* originates in the decomposition of vital air, when received into the lungs ; and they observe, that the quantity decomposed and vitiated, or, in other words, the generation of heat, bears direct proportion, as before explained, to the quantity of combustible matter, whether animal or vegetable, whether sugar, oil, or spirit, received into the stomach.

They observe likewise, that acids received into the stomach check and restrain the generation of heat ; or, in other words, that, when the system is saturated with *oxygen*, less vital air is decomposed by the lungs, and consequently less heat is generated.

On this subject the student must recollect what I have said on *respiration*, and particularly the experience of the celebrated diver Mr. Spalding.

It is upon these principles, that the reapers in the south of Spain covet their *gazpacho*, composed of bread, oil, and vinegar: the two first articles for nutriment, and the latter to moderate the heat.

On the same principles, obedient to the voice of nature, during the sultry heats of summer, we equally desire our *gazpacho*, composed of lettuce, oil, and vinegar.

Agreeable to this strong desire we may remark, that in warm climates, and in summer, the acescent fruits abound, but in the autumn we have chiefly those which produce oil and sugar.

Should *delirium* supervene in Synocha, attended by strong pulse, inflamed eyes, with fulness and flushing of the countenance, six or eight leeches must be applied to the temples, and the legs must be put into a warm bath, heated to 96 or 98 degrees of Fahrenheit's thermometer. This will make a derivation, and with plentiful evacuation from the temples, will relieve the affection of the head.

When I was lately at Bath, my old friend and fellow-student, Dr. Fothergill, communicated to me his method of treatment in cases of *Synocha*, and, from my high estimation of his experience and abilities, I shall be inclined to adopt his practice.

The medicine on which he places his principal dependance is *Clutton's Febrifuge*.

It is thus prepared :

Take oil of sulphur by the bell, with oil of vitriol rectified, and sea salt, of each one ounce ; rectified spirit of wine three ounces ; digest for a month, then distil to dryness.

To half a pound of this spirit add angelica root, serpentaria, and cardamoms, of each a dram and a half, for a febrifuge tincture.

Spring water acidulated with this, and sweetened to the taste, makes a cooling diaphoretic and diuretic julep, of which the patient must drink five or six pints in the four and twenty hours. Clutton, who made no secret of the composition, assures us, that a recent fever is cured by it commonly in two days. If not given early in the disease, he joined with it some antimonial.

SECTION V.

INDICATIONS OF CURE IN TYPHUS.

IN Typhus the intention must be,

1. *To cleanse the first passages.*
2. *To support the powers of life.*
- and 3. *To obviate any tendency to putrefaction in the system.*

The first of these indications is, I trust, deducible from what has already been delivered; but the importance of the subject will be my justification, if, in its support, I avail myself of an opinion delivered by one of the ablest practitioners in Ireland.

Professor MACBRIDE, of Dublin, has well observed, that the most common source of disturbance in the nervous system is acrid and offensive matter in the alimentary canal, either in the stomach or flexure of the duodenum.

The propriety of this observation must be obvious to every one, who in Typhus, whether it observe simply the nervous or assume the putrid form, pays attention to the foul tongue, the bitter taste, the defective appetite, attended by nausea and anxiety. But it will be more evident when he remarks, that in proportion as the first passages are cleared, these symptoms, with all the other distressing and nervous affections, are relieved.

Should no symptoms of putridity appear, *Typhus* will be a nervous fever: but should putrescent fordes continue in the bowels, it will certainly become a *putrid fever*.

The principal cause of irritation is in the alimentary canal.

Impressed with this idea, the young practitioner will see the necessity of cleansing the first passages by emetics; and although to give drastic purges would be rash in the extreme, and perfectly inconsistent with the principal intention, yet he will once
a day

a day procure a stool, either by the decoctum tamarindorum cum fenna, or by such gentle cathartics as prudence may suggest. The design is merely to evacuate putrescent fordes, and thereby to strengthen, because these speedily induce extreme debility; but, at the same time, it is well known, that nothing, in nervous diseases, consumes the vital powers more effectually than strong cathartics.

The decoction of tamarinds with fenna is thus prepared:

Take tamarinds six drams; crystals of tartar two drams; water a pint and an half. Boil these to one pint.

In this decoction infuse for twelve hours one dram of fenna; strain off the liquor, and add syrup of violets one ounce.

This may be taken for one dose, and tincture of rhubarb may be occasionally joined with it.

Should there appear, by the fulness of the lower belly, to be a congestion of fæces in the last of the intestines, a clyster may be injected to advantage.

This may be composed of milk with some oil, sugar, and salt.

The second indication is *to support the powers of life*, always remembering, that debility and irritability are as intimately connected, as the cause with its effect. To support the powers of life, the chief dependance will be on pure air, a generous diet, port wine, and the Peruvian bark.

The

The bark must be administered in such doses as the stomach will endure; not once, nor yet eight times, in the four and twenty hours; because, thus given, the needful quantity might overload the stomach, and produce a nausea.

When taken every second hour, the dose may be reduced. The bark may be combined with antimonials, aromatics, opium, as occasion may require.

The student should remember, that according to the experiments of Drs. Hunter and Stevens, confirmed by the experiments of Spalanzani, animal substances are digested more readily than vegetables.

That the latter are less nutritious than the former, must be evident to every one, who considers the debility of those who are confined to vegetable diet, when compared with the strength of those who have plenty of animal food.

Whatever may be the articles of diet, they should be administered frequently, in small quantities, to be increased as the appetite requires and the stomach can digest. It may consist either of butcher's meat, such as beef and mutton, of eggs, of milk, or of the compositions already mentioned, as being least subject to putrefaction.

These should be well chewed to increase the quantity of saliva.

The wine to be administered should be at all events sufficient to maintain the vital energy.

This

This must be determined by the pulse. Should the pulse be rapid, weak, and fluttering, the quantity must be increased.

The student will observe, that in proportion as he throws in a proper quantity of nutriment, with wine and bark, the pulsations will diminish in number, whilst they increase in strength.

The salutary effects of *vital air* received into the lungs have been already noticed, and the subject will be resumed hereafter.

Delirium in Typhus must be considered as a symptom of debility; for it must not be confounded with the delirium of a Synocha, from which it differs, as far as the east is from the west.

The distinction is of the last importance, because it leads to practice, which, if erroneous, must be fatal.

In the *delirium* of *Synocha* we have the pulse full, strong, hard; the countenance flushed; the cheeks red; the eyes inflamed.

In the *delirium* of *Typhus* we have the small, quick, feeble, fluttering pulse; the countenance sunk; and the eyes either stupid and vacant, or moist and quick in motion; with other symptoms of debility and irritability, such as cold sweats, flow of tears, purging, plentiful discharge of urine, trembling and twitching of the tendons, coldness of the extremities, and, towards the closing of the scene, insensibility, with involuntary evacuations by urine and by stool.

To

To relieve the *delirium* of Typhus, the legs must be fomented for many hours with flannel dipt in hot water, and renewed every half hour ; or, which is preferable, let the legs be bathed every hour, for ten or fifteen minutes at a time, in water heated to 94 degrees of Fahrenheit's thermometer, and repeated till sleep comes on.

Should this fail to give relief, recourse must be had to wine, brandy, camphor, opium, with this precaution, that if there be symptoms of foulness in the first passages, these cordial stimulants must, at all events, be preceded by five or six grains of James's powder, or some of the antimonial calces, which must be repeated every four hours, as occasion may require.

If the cordial stimulants relieve the head, strengthen the pulse, lessen the number of vibrations, diminish heat, remove thirst, and bring on a gentle moisture on the skin ; the student will be satisfied, that he has made no mistake in his diagnosis, and will be encouraged to proceed.

Sometimes it is expedient to unite antimony with the opium and camphor as in this form :

R. Tinct. Thebaic. gtt. 40.

Mistura camphorat. ℥j.

Vin. antimon. gtt. 20. m.

p. r. n. s.

That is,

Take Thebaic tincture forty drops, camphorated mixture one ounce, antimonial wine twenty drops, for one dose, to be repeated as occasion may require.

The third and last indication is, *to obviate any tendency to putrefaction in the system.*

To fulfil this intention, the student, reflecting that the alimentary canal is the storehouse of putrefaction, should, under the cautions and in the way suggested, evacuate the bowels. But as this cannot be always performed with sufficient safety, it will be necessary to restrain the putrefactive process.

In a late publication of Dr. Beddoes, we have a relation, transmitted to him by the Rev. Edmund Cartwright, of most astonishing cures in putrid fevers accomplished by yeast.

The patients, from being reduced to the last extremities, were in four and twenty hours so far restored to health, as to leave not merely their beds, but the house also, and to pursue their usual occupations.

He gave two large spoonfuls of yeast in three hours, interposing bark, wine, and nutriment. In ten minutes from taking the yeast, he perceived an alteration for the better in the pulse, which became more composed and regular. The operation of the yeast, like that of the bark, was evidently to check the progress of putrid fermentation in the alimentary canal, which is most undoubtedly the fomes of the fever. Mr. Cartwright, on whose veracity we
may

may place the most implicit confidence, assures us that it never failed with him.

No sooner had Dr. THORNTON, who inherits the active and benevolent temper of his father, the celebrated BONNELL THORNTON, perused the extraordinary narrative of the Rev. Mr. CARTWRIGHT, on the efficacy of yeast, than he anxiously waited for an opportunity of trying its virtues; especially as its operation seemed to be, by imparting *fixed air* immediately upon its entering the warm stomach.

One day, by accident, as he went past a shop * in Tottenham-court Road, he heard the screams of a mother, who was agonized on seeing her child expire. These screams renewed the struggles of the child, and the nurse who attended, threatened to take away at this moment the child, that it might die in quiet. Dr. THORNTON got down immediately some tartar emetic, which quickly acted as a vomit; and after the operation was over he gave rhubarb, which cleared the intestines; he then ordered the child every two hours *yeast* and *water*, with *wine* and *bark*, and in three days the dying child was up and well.

The infection had spread to two others in the same house. In this child and in another the putrid fever was attended with *swelled glands*, which suppurated, and threatened gangrene. In a robust servant girl it took the form of a dreadful *putrid sore throat*. She had an emetic and afterwards some rhubarb, then *yeast* and *water* every two hours. The

* Mr. Burford's.

first effects of this newly discovered remedy, was that of rendering the pulse fuller and fifteen beats less in a minute, and her *black* tongue soon assumed a *clean* and *red* appearance. Without *bark* or *wine* she was speedily recovered.

The food, with the same intention of restraining the putrefactive process, should be chiefly of the *acescent kind*; yet, that it may contain a sufficient quantity of nutriment, and, at the same time, may have little tendency to flatulence, it should be taken from the animal kingdom. Milk, therefore, in its various forms, alternating with the snail mixture, as before mentioned in the case of bilious autumnal fever, will be most desirable.

Should, notwithstanding, a colliquative diarrhœa intervene, with an aggravation of the symptoms, this must be restrained, by wine, spices, opium, and Angustura bark, either separately used, or united in the following form :

R Infus. Cort. Angustur. 3vj.

Tinct. ejusdem, 3ss.

Pulv. ejusdem, ʒj.

Tinct. Opii, gtt. 20.

Tinct. Lavend. Comp. gtt. 40. m.

c. c. Co. 3. o. 4 h.

That is,

Take infusion of Angustura bark six ounces, tincture of the same half an ounce, powder of the same one scruple, tinctures of opium twenty drops, and of lavender forty. Mix, and give three spoonful for a dose, to be repeated every four hours.

When nurses or medical practitioners perceive, by shivering and sickness, that they have taken the infection of Typhus, they should, without loss of time, assist the efforts of nature to relieve herself, and clear the stomach by emetics, not satisfied with one, nor even two, if they are determined to run no hazard of the fever.

Three hours may be interposed between the exhibitions. The emetic, as used and recommended by Dr. Saunders in this case, may be five or six grains of ipecacuanha with one of tartarized antimony.

SECTION VI.

OF THE PLAGUE.

I MIGHT now proceed to the consideration of *intermittents*; but I choose rather to say something in this place on *pestilential fever*, that I may connect it more immediately with *Typhus*, of which it is undoubtedly a species.

Following the footsteps of my master, I placed *Pestis* in my nosology under the order EXANTHEMATA, of the class PYREXIÆ, with the subsequent description.

Pestis.

The *Plague*.—Typhus, contagious in the extreme; prostration of strength; buboes and carbuncles; petechiæ;

techix; hæmorrhage and colliquative diarrhœa. Such are the symptoms.

Dr. Guthrie, of Petersburg, in his communications with Dr. Duncan, has favoured us with a clear and distinct idea of this disease, transmitted to him by Baron Ash, Physician General to the army of Moldavia and Walachia, A. D. 1772, in the Turkish war.

The first symptoms are a dull pain in the head, with shivering and universal debility; a bitter taste; nausea; a heavy inflamed eye; a dejected countenance; and a white foul tongue.

These are followed by vomiting, and by buboes in the inguinal, subaxillary, or parotid glands. To these symptoms succeed livid coloured carbuncles in different parts of the body, delirium, with small quick pulse, convulsions, death.

The ingenious Dr. Gardiner says, that in the opinion of Dr. Mackenzie, who lived eight years at Smyrna, our *jail fever* is the same with the common endemic pestilential fever of Constantinople, which, when rising to a great height, and when to the ordinary symptoms are joined buboes and carbuncles, is called the plague. In support of this opinion Dr. George Fordyce, whose superior knowledge and accuracy of distinction merit our attention, has remarked, that the plague and malignant fever have the symptoms of the first stage violent; such as, languor, coldness, trembling, pain in the back, horri-

pilatio, paleness, dryness of the tongue, thirst, transparent urine, costiveness, small pulse sometimes intermitting, delirium, anxiety, quick laborious respiration, rigor, horror, nausea, vomiting.

Dr. Gardiner thinks, and I perfectly agree with him, that contagion, whether marsh or human, is taken by the saliva into the stomach, and may be instantly ejected by emetics. The experience of numberless practitioners confirms this idea.

Agreeable to this, Baron Ash and the most successful practitioners in *pestilential fever* begin their operations by cleansing the alimentary canal.

The following is their plan of cure :

1. They administer emetics. And for this purpose they prescribe, ipecacuanha half a dram, tartarized antimony one grain, with one scruple of vitriolated tartar, for a dose. This emetic they work off with acidulated drinks; and should the nausea with bitter taste remain after the administration of the first emetic, they give a second, a third, or even a fourth, in the space of twelve hours.

And it is highly worthy of our notice, as applying equally to Typhus, that emetics are not subject to the same objection as brisk purges, which a man in the plague is unable to support. When the infected have dropped down suddenly, as if shot with a musket ball, they have been perfectly restored by one emetic, and returned to duty within four and twenty hours from the first stroke of the infection.

With

With this practice Giovanelli, as we are informed by Mr Howard, perfectly agrees.

2. The Russian physicians, having cleared the stomach, order the following powder to be taken every morning: Rhubarb and flowers of sulphur of each one scruple, ipecacuanha three grains. In case of costiveness they prescribe, by way of clyster, a decoction of camomile flowers with vinegar; then, every hour, they give the following mixture: Camphor two grains, nitre five grains.

These are followed in two days by a mixture, of the Peruvian bark one ounce, and flowers of sulphur two drams; of which the patient takes two scruples every second hour.

4. They administer acidulated drinks, and diffuse acetous vapour in a well ventilated chamber.

Dr. Guthrie concludes his account by a remark, that a man may be in perfect health when he goes to rest, and the next morning the nervous system may be in such a state of debility, that he can scarcely answer the questions of his physician. Hope and confidence, he adds, are the most powerful preservatives from the infection of the plague.

SECTION VII.

OF PUERPERAL FEVER.

DR. CULLEN has been thought deficient for not having mentioned *Puerperal Fever* as a distinct species of *Febris Continua*; but, in his vindication, we may be permitted to observe, that the disease in question must, through its various forms and progress, be reduced either to *Synocha*, to *Typhus*, or to the order of PHLEGMASIÆ.

From the works of the most eminent practitioners it appears, that of puerperal fever we may trace varieties dependant on the occasional cause; and to this particular attention must be paid.

The occasional cause may be,

1. *Infection*.—This has been distinctly traced in hospitals, and has been prevented by cleansing the wards wherein it had appeared.

2. *Inflammation of the omentum*, injured, as supposed, by pressure from the gravid uterus.—This inflammation may, however, be an effect and not the cause; although, while present, it requires particular attention. That in reality it is so I am inclined to think, because in thirty years I have never met with it among my parishioners.

3. *Suppression of the lochia*.

The

The fever usually begins with inflammatory symptoms; but it very soon terminates in Typhus.

The indications of cure are,

1. *To cleanse the alimentary canal.*
2. *To restore the lochia.*
3. *To support the powers of life in the progress of this fever.*

The first intention may be answered by emetics and cathartics, which must be used till the first passages are clear. The second by emenagogues.

The most successful practitioner I ever met with in this fever was the late Mr. Jenny, of Truro in Cornwall, who was not afraid to restore the lochia even by aloetic preparations.

These certainly stimulate the rectum, and act powerfully by sympathy on the vessels of the uterus. But as nature is, with certain intermissions and intervals of repose, constant in her efforts to relieve herself; when the alimentary canal is cleared, she usually effects herself a restoration of this needful evacuation. Should, however, her strength fail, and her efforts therefore be defeated, we must proceed to our third intention.

The third intention may be answered by the Peruvian bark, with wine; and in the last stage of the disease, when a colliquative diarrhœa supervenes, by the bark united with columbo root and opium.

Genus II. *Febris Intermittens.**Intermittent Fever.*

INTERMITTENTS, whether they appear in the form of quotidians, tertians, quartans, or whatever be their type, have clearly an affinity and strong connection with continued fevers. They run into each other with remarkable facility; and the disease which begins under one genus, frequently terminates in the other. Intermittents, with bad management, become continued fevers; and these, properly treated, are soon made to intermit.

Intermittents, like the continued fevers, may be distinguished into two species, bearing a strong resemblance to Synocha and Typhus, and equally with the latter may be attended by symptoms of putridity.

The predisposing cause of intermittents is clearly debility with penury of blood; because the robust, and such as have a generous diet with a sufficient quantity of wine, are most free from this disease.

The occasional cause is usually marsh miasma, and exposure to cold with humidity, more especially if alternating with heat.

The

The sedative and deleterious effects of marsh miasma appear from the testimony of Sir John Pringle, respecting soldiers fainting, and dying suddenly, as they marched through morasses during the campaigns in Flanders.

As to the proximate cause of intermittents we must refer to what has been advanced already on continued fever.

From this it will be evident, that the indications of cure must be,

1. *To clear the first passages from bile, undigested food, and viscid mucus.*

2. *To strengthen the system, and to brace the fibre.*

To answer the first intention, and to prevent congestions in the abdominal viscera, we must frequently have recourse to powerful emetics, followed by calomel. Let the stomach and bowels be evacuated, let them be freed from fordes and from viscid phlegm, and the intermittent ceases; yet without tonics, the fordes may collect again, and if so the fever will return. I frequently combine the calomel gr. 4 with antimon. tartarifat. gr. j. at night, and repeat it in the morning.

To answer the second intention we prescribe a generous diet, with wine and exercise, assisted by astringents, either vegetable, such as bistort, tormentil, the Peruvian bark, and the barks of oak, of willow, and of horse chesnut; or mineral, such as alum, with the preparations of iron, zinc, and copper.

To these vegetable and metallic astringents may be united bitters, with aromatics, according to the subsequent forms.

℞ Cinchona ℥j. Aq. frigid vel Vin. alb. Hispan. ℥ij.
post 24 horas, Colaturæ ℥iss. addas Aq. Cinnamon.
Syr. bals. āā ℥j. m. f. Haust. o. b. h. s. absente
febre.

That is,

Take Peruvian bark one ounce, infuse 24 hours in a pint of water or sherry wine, strain, and to an ounce and a half of this infusion add cinnamon water and balsamic syrup of each one dram. Mix, and take this every two hours in the absence of fever.

℞ Cinchona ℥j. Myrrh ℥j. Extr. Glycyrr. ℥ij. Syr.
Cort. aurant. q. s. f. Elect. c M. N. M. o. b. h.

That is,

Bark one ounce; myrrh one dram; sugar of liquorice two drams; syrup of orange-peel a sufficient quantity to make an electuary; of which take the quantity of a nutmeg every two hours.

℞ Cinchona ℥j. Chalyb. Rubig. pp. ℥ij. Pulv. Aromat. ℥j. Conf. Cort. Aurant. ℥ss. Syr. Zinzib. q. s. f. Elect. c M. N. M. o. b. h.

That is,

Take bark one ounce, rust of iron two drams, aromatic powder one dram, conserve of orange-peel half an ounce; syrup of ginger sufficient to make an electuary; take the size of a nutmeg every two hours.

Bark

Bark is frequently given in a clyster ; or it may, with manifest advantage, be quilted in a waistcoat.

Camomile flowers alone in sufficient quantity, or any other bitter, will effect a cure.

As a tonic we may mention *hope*, which the regular practitioner may venture without scruple to administer whilst he is witness to its efficacy when dispensed by quacks. For as there is not a more powerful sedative than fear ; so neither has any cordial a more benign influence on the system, as a tonic, than reviving hope, and from this alone can *charms* derive their power.

In the cure of intermittents, it should be remembered, that nature delights in *habits*, and that these, once broken, do not readily recur.

If, then, the emetic be administered before the accession of the paroxysm ; this powerfully determines to the surface, induces perspiration, effectually prevents the cold fit, and consequently the other stages, which in the natural course of the disease would immediately succeed it, and by once breaking the habit, will frequently of itself effect a cure.

This intention may be answered by electric shocks frequently repeated before the cold fit comes on, so as to excite a perspiration, which, by the same means, must be continued beyond the usual period of accession.

With the same intention, previous to the cold fit, opium, in small doses, may be administered to diminish irritability ; or, from thirty to fifty drops of
liquid

liquid laudanum may be combined with either two grains of ipecacuanha, to make *Dover's powder*, or with one grain of tartarized antimony, which is more efficacious than the former. These medicines exhibited in bed, previous to the accession of the cold fit, will induce a sweat and often prevent the paroxysm.

Some practitioners give opium in the hot fit, to shorten the paroxysm, to produce a kindly and a copious sweat, to procure refreshing sleep, to invigorate the system, and to prepare for the exhibition of the bark.

Arsenic, introduced and sold as a specific by the quacks, has lately been adopted by regular practitioners in the form recommended by Dr. Fowler,

℞ Arsenic Alb.

Sal Alk. veget. fix. $\bar{a}\bar{a}$ gr. 64.

Aq. distil. ℥ss.

immittantur in ampullam, quâ in balneo arenæ positâ, aqua lente ebulliat, donec arsenicum perfecte solutum fuerit; deinde solutioni frigidæ adde Sp. lavend. Comp. ℥ss. Aqua distil. ℥ss. M.

Dosis gtt. 10 bis die ad gtt. 20 ter die.

The use of this powerful astringent comes sanctioned to us by the recommendation of Drs. Fowler, Arnold, Withering, Willan, Marsh, and Pearson.

Mr. Jenner, a very ingenious surgeon, of Painſwick in Gloucestershire, who cured more than 200 intermittents with it, says, that the solution should be carefully filtered when it is cold,

From

From long experience I am clearly of opinion, that neither this nor any other astringent, either vegetable or mineral, can *with safety* be administered before the stomach and bowels have been cleansed; and I must here suggest a caution to the young practitioner, when he is prescribing for children who complain of intermittents.

He will frequently find this disease attendant upon *worms (teretes)*, and must therefore pay particular attention to the symptoms.

If he observes a fallow and a bloated countenance, a thick lip, and a prominent abdomen; if the breath is offensive, and the child either picks the nose, or starts in sleep; let him be certain that by proper anthelmintics he will discover the occasional cause of this disease.

A few grains of calomel from three to eight at night, followed by a brisk cathartic of rhubarb and senna in the morning, will be sufficient to cure this intermittent; yet it may be proper, after these medicines, to administer tonics and astringents, particularly steel-filings with bark, as the most effectual antidotes for intermittents, and the best preservative from worms.

Genus III. *Febris hectica verminosa.**Hectic Fever induced by Worms.*

EVERY disease incident to the human frame must appear in a system of nosology, either as primary or as symptomatic: but worms in no system of nosology give appellation to a primary disease; the hectic, therefore, which is induced by worms, must stand as a primary disease, and worms, as the occasional cause, must denominate the species. As for the hectic, which is a symptom of tabes and of phthisis pulmonalis, it will be treated of hereafter in its proper place.

I might produce many instances of hectic induced by worms, but it may be sufficient that I refer to one.

The indications of cure are,

1. *To poison the worms.*
2. *To remove their nidus, or slime, off the intestines.*
3. *To hinder the regeneration of slime by corroborants.*

Thomas Winter, aged 19, was declared by his physician to be in the last stage of consumption. I found him with Pyrexia, which was evidently neither *Synocha* nor *Typhus*. This was attended by exacerbations at noon, but chiefly in the evening, frequently, but not always, followed by slight remissions in the morning, after nocturnal sweats. Sometimes, however, the chills returned in the middle of the fever.

The urine usually deposited a bran-like sediment; the appetite was uncertain; the thirst was moderate.

As the most remarkable symptoms were emaciation, weakness, and hectic, the attention might have been turned towards tabes; but I found also a strong cough, and to all appearance purulent expectoration, the well-known symptoms of *phthisis pulmonalis*.

The idea of phthisis might have been confirmed by observing a red circumscribed spot upon his cheek. But he had no spitting of blood, no sign of scrophula; nor had the present symptoms been preceded by catarrh. I took notice, that his breath was foul, and I was informed, that he was perpetually picking his nose, that he started in his sleep, and was apt to grind his teeth.

I observed at times a heaving, when with his cough he had no expectoration. He complained of a pain in his stomach, and was often disgusted at the sight of food. The bowels were sometimes open, but he was generally costive. He had perpetually either a ringing in his ears or a noise like the grinding of a mill.

From these symptoms I did not hesitate to conclude that he had worms. I therefore ventured to prescribe ten grains of calomel at night, to be purged off, if occasion should require, with senna in the morning. The next day I found
that,

that, without the assistance of the senna, he had passed many stools of viscid mucus, and with them twelve large round worms, the smallest of which was at least six inches long. His cough and spitting were abated, and he had some appetite for food.

Confirmed in my ideas, I repeated the calomel at night, but not in so large a dose; and the effect was similar to that of the preceding day. In less than a week all his symptoms were alleviated, and in ten days his expectoration ceased. When I was satisfied that I had cleansed the alimentary canal, I gave him the Peruvian bark, with myrrh and filings of steel, by the assistance of which his strength rapidly returned, and he is now a miller in the vicinity of Bath, and as fine a fellow as can be seen.

When from the symptoms already enumerated, or to be hereafter mentioned, it is evident, that *worms* are the cause of disturbance in the system, they may be easily destroyed by wormfeed (*santonium*), cowhage (*stizolobium*), Indian pink (*spigelia*), or bear's-foot (*belleborus fatidus*).

But the most effectual way to get rid of them is by powerful cathartics, such as clear the intestines from viscid mucus; particularly calomel, with rhubarb and jalap, for the *teres*; aloes for the *ascarides*; and gamboge for the *tænia*.

For the *tænia*, or *tape-worm*, the famous remedy of Madam Nouffer was *fern root*, of which she gave three drams early in the morning, followed in two hours by this bolus:

Take calomel and scammony of each ten grains, gamboge seven grains.

To prevent this from being rejected by the stomach, it may be divided and taken at intervals. The bowels must, however, be prepared the preceding night by a mess of panada, composed of bread two ounces with butter three ounces.

Sir John Elliot, from whom I had this information, assured me, that, by a strict adherence to this plan, he had brought away from Sir A. C. before he went to the East-Indies, a *tænia* perfect and intire of a most enormous length.

These worms are sometimes to be destroyed by slight electric shocks, as Dr. THORNTON informs me.

When worms have been destroyed, bitters and astringents must be administered, to prevent the accumulation of viscid mucus in the intestines.

Chalybeates answer this intention best, particularly iron-filings, which, at the same time, act mechanically, and wound the worms, when present in the bowels.

Order II. PHLEGMASIÆ.

INFLAMMATIONS.

INTRODUCTION.

THE character of this order, as already mentioned, is Pyrexia, with topical pain and inflammation.

This order differs essentially from *Febris*, because

1. The symptoms of the first stage do not of necessity precede it.
2. It neither intermits, nor is it subject to regular exacerbations and remissions.

The student must be careful to distinguish the pain of inflammation from that of spasm, which is a disorder of another class; and he must take especial notice, that to constitute a disease of Phlegmasia, there must be not merely topical pain, but Pyrexia.

It will be needful likewise to remind him, that the buff coat on the blood, unless supported by more substantial evidence, is a fallacious test of inflammation.

This order contains many genera; but, if he attends to what has already been delivered on *Syno-*

cha and *Typhus*, he will find no difficulty in the management of these.

The termination depends, 1. on the nature of the *diathesis*; 2. on *the conduct* of the medical practitioner.

When there are symptoms of strength in the nervous and arterial systems, this state, adopting an expression derived from the Greek, we may call the *sthenic diathesis*: but should there be symptoms of debility in the nervous and arterial systems, this condition of the human frame, by taking the Greek privative, must then be called the *asthenic diathesis*. Should any one, however, choose in preference to call the former the inflammatory diathesis, the latter, in my opinion, to make the contrast, should be denominated the hysterical diathesis; but the expressions *sthenic* and *asthenic* appear to me best suited to the improved state of science.

This distinction, respecting the *diathesis*, lays the foundation for a correspondent distinction to be noticed in all the diseases of this order; for inflammation in its present acceptation requires to be considered either as *active* or *passive*.

SECTION I.

OF ACTIVE INFLAMMATION, WITH
ITS PROXIMATE CAUSE.

Active inflammation is the disease of the sthenic diathesis, and has for its proximate cause local irritation, with morbidly increased action and excess of oscillatory motion in the arteries of the part affected. It may be considered as a local Synocha, unless when, by consent, the general system is affected, for then the attendant fever is decidedly a Synocha.

In this species of inflammation the pulse is hard, strong, full, and frequent, about 100 in a minute.

The natural termination is, 1. by resolution; 2. by suppuration and granulation; unless where a union of divided parts takes place by inflammation only, and the healing is effected, as we express it, by the first intention; or unless by its violence it induce debility, in which case it may terminate in sphacelus and death.

SECTION II.

OF PASSIVE INFLAMMATION, WITH
ITS PROXIMATE CAUSE.

Passive inflammation is a disease of the asthenic diathesis. The proximate cause is, not local irritation, nor morbidly increased action, and excess of oscillatory motion in the arteries of the part affected, for these can be merely the occasional cause of passive inflammation; but it is loss of tone, relaxation, debility, a deficiency of vital energy, and diminution of resistance. It may be considered as a local Typhus; unless when the general system is affected, for then it ceases to be local.

In this species of inflammation the pulse is small and frequent, from 120 to 140 in a minute. It is attended by sickness, restlessness, and want of sleep; faintness, prostration of strength, spasmodic contractions of the muscles, and every symptom of debility.

The natural termination is by sloughing, or by the spreading of sphacelus, till it ends in death.

In both these species of inflammation we have congestion of blood and distention of vessels, with this difference, that in the latter the pain ceases, the fluids stagnate, and the part affected, if visible, is

observed to be of a dark or *livid hue*; whilst the former has much pain, and the blood flows quicker than usual through the distended vessels, increasing heat and augmenting both the natural secretion by the glands affected and the discharge of lymph from the exhalants; and the part inflamed is of a *florid colour*.

When this complexion changes; when the Pyrexia runs high; when the pain is violent, and the heat advanced to 110 degrees of Fahrenheit's thermometer; we may be certain that the former species will soon be succeeded by the latter, and that a *mortification* is approaching.

SECTION III.

OF THE OCCASIONAL CAUSES OF INFLAMMATION.

THE occasional causes of inflammation may be,

1. Excess of heat or cold, or of heat alternating with cold.

2. Caustics of every kind.

3. Stimuli, either chemical, mental, or mechanical; particularly the stimulus of distention, which produces sensibility and irritability, where it did not appear before, and increases them in ligaments and membranes to a most astonishing degree.

4. Mechanical

4. Mechanical injuries by laceration, division, compression.

The indications of cure must be either to diminish action, or to increase the tone, according to existing circumstances and the species of inflammation.

SECTION IV.

INDICATIONS OF CURE IN ACTIVE INFLAMMATION.

THESE are,

1. To obviate the occasional cause of the disease.

If stimuli or any acrid substances irritate the system, these must be either removed, sheathed by oils and mucilage, corrected by suitable antidotes, or the part itself must be destroyed.

2. To lessen the irritability of the system.

This may be accomplished by the tepid bath and sedatives locally applied; by tonics; by astringents; by acids; and by the inspiration of the carbonic acid, and azotic, airs.

3. To excite a stronger inflammation in some adjoining, but safer and more manageable, part.

Hippocrates has well observed, that a greater *pain* destroys in a considerable degree the *feeling* of a lesser one. Agreeable to this Dr. WHYTT informs us, that the muscles of a frog immediately after decollation are insensible to stimuli; but, in ten minutes after this, on pricking the toes, the whole body will be violently moved.—Nature seems to pay her first attention to the loudest call.

4. To lessen the tensions of the arteries, and thereby promote a resolution.

As the morbid irritation and action of the arteries is occasioned by distention, and the distention itself is in proportion to the action of the larger arteries; it must constantly and progressively either diminish or increase, till it ends in either resolution or suppuration. To secure the former, we must diminish the tension of the vessels by bleeding, either general or partial, according to the nature and urgency of the disease.

The same intention may be answered by cathartics; and for this purpose practitioners combine calomel with tartarized antimony, adding either opium or soluble tartar, according as they wish, either, at the same time, to promote perspiration, or solely to evacuate the bowels.

But here a caution will be needful.

The young practitioner, who meets with cases of violently active inflammation, must be upon his guard lest, by sudden and copious evacuations, carried

ried to excess, he should induce debility with its train of evils, such as Typhus, gangrene, hysteria, dropy ; for in this case

·Incidit in Scyllam, qui vult vitare Charybdim.

In addition to what I have here delivered, let the student consult the indications of cure in Synocha.

SECTION V.

THE INDICATION OF CURE IN PASSIVE INFLAMMATION.

It is simply to support the vital powers.

This may be done by cordial stimulants, such as opium, wine, and aromatics ; by tonics with astringents, such as bitters, bark and steel ; and by the inspiration of *oxygenated air* mixed in due proportion with atmospheric air.

But see more upon this head in the indications of cure in Typhus.

SECTION VI.

OF THE VIRES NATURÆ MEDICATRICES.

The efforts of nature to relieve herself have, in all ages, exercised the attention of speculative minds. It is not my intention here to introduce the *Archæus* of Van Helmont to the student; but I shall state some facts, which will give him an idea of those efforts, which nature can exert for warding off approaching evil, for removing whatever disturbs her œconomy or functions, and for repairing any injury the system has received.

When cantharides, spread on a plaister, are applied to the surface of the body, they first excite a genial warmth with *inflammation* of the skin. A sense of burning follows, and nature distressed goes instantly to work, separates the cuticle to form a bag, interposes serum between the nerves and the offensive matter, then prepares another cuticle, that when the former with the adhering substance shall fall off, the nervous papillæ may be again provided with a covering.

If a grain of sand falls into the eye, tears flow in great abundance to float it off, that it may not mechanically injure that delicate and most irritable organ.

The

The same reasoning will apply to the operation of emetics and cathartics ; for not only is the peristaltic motion, either greatly quickened or inverted, according to the urgency of the distress, but both the mucous glands and the exhalant arteries pour forth their fluids in abundance to wash away the matter that chemically or even mechanically offends.

When a thorn is lodged in some irritable part, the first suggestion of the mind is by the fingers or by the assistance of the nails to extract that thorn. But it is perhaps beyond our reach.

The design of nature, in the consequent *inflammation*, is to produce suppuration, and thereby to remove the thorn.

Should this effort be effectual, she next proceeds to the granulation of new flesh. The arteries and the veins, the lymphatics and the nerves, extend themselves, unite, and renew their communication, and, without the assistance of a surgeon, nature effects a cure.

Supposing her efforts to float off the offending matter, whatever it may be, should be insufficient after the suppuration is complete, she then proceeds to surround it with a wall ; a hard and insensible callus is produced ; or, in the language of surgery, a *fistula* is formed, and here, as I apprehend, her efforts cease.

In case of pleuretic *inflammation* nature pours forth coagulable lymph, and, without the physician's aid, forms a new membrane, supplied, like the renovated

novated flesh already mentioned, with arteries, veins, lymphatics, nerves, and thereby preserves the substance of the lungs from injury.

Among her most astonishing efforts are those exerted in some cases of *extra-uterine conception*. For when a child has been lodged within the cavity of the abdomen, from which it cannot be extracted in the usual way; nature, by *inflammation*, forms adhesion, and in process of time an abscess, so as to eject the foetus, either through the teguments of the abdomen, or by the rectum; and this sometimes without considerable injury to the mother's health.

Yet more astonishing are her resources in cases of *necrosis*. For supposing some portion of a bone, for example of the tibia, to be deprived of animation, this she envelops with new bone, united at each extremity with the fibres of the living bone. Here it proves a stimulus, and calls forth renewed efforts of the vital principle. Inflammation is produced; suppuration follows; fistulous openings are formed in the new bones, and the dead portions, if not extracted by the surgeon with the chisel and the saw, are dissolved by the pus and floated off.

Thus nature in almost innumerable cases, even without assistance, is able to effect a cure.

I have already mentioned, in cases of *inflammation*, the efforts to relieve herself by resolution and by suppuration; but when the vital energy in a part has been totally exhausted and *sphacelus* ensues, she has still one expedient left, and this frequently effects
a cure.

a cure. Fresh *inflammation* is excited and makes a separation between the living and the dead. The part deprived of animation is cast off by sloughing; a kindly suppuration follows, and granulation with a new cuticle completes the cure.

SECTION VII.

THE GENERA OF PHLEGMASIÆ.

THIS order in my nosology contains eighteen genera; they should be nineteen.

Phlogosis, Ophthalmia, Phrenitis, Cynanche, Catarrhus, Pneumonia, Carditis, Peritonitis, Gastritis, Enteritis, Hepatitis, Splenitis, Nephritis, Cystitis, Hyteritis, Arthropuosis, Rheumatismus, Odontalgia, Podagra.

Of these I shall speak in succession.

Genus IV. *Phlogosis*.

THIS for its symptoms has Pyrexia with redness; heat; pain; and tumor on the surface of the body.

This genus contains two species.

1. *Phlegmone*.—A *phlegmon* with inflammation of a bright red colour; tumor pointed; throbbing and tending to suppuration.

2. *Erythema*.

2. *Erythema*.—*St. Anthony's fire*, or *the rose*, with inflammation of a dull red colour, vanishing upon pressure, spreading unequally, with a burning pain, and tumor scarcely perceptible, ending in desquamation, or vesicles of the scarf-skin.

Erysipelas is a variety of *Erythema* preceded by *Synocha*, during which drowsiness and delirium are not uncommon symptoms. The face, if it be as usually the part affected, becomes bloated; the eyelids swell; and the surface of the skin is blistered. If the fever, inflammation, and delirium, are suffered to run high, the patient dies apoplectic on the seventh, ninth, or eleventh, day of the disease; or symptoms of irritation supervene, the type of the fever then changes, Typhus is formed, and the progress ends in gangrene.

Nothing is more distressing to a writer than methodical arrangement. The division into class, order, genus, species, and variety, is artificial; but nature scorns to be confined within such limits, and, as in the animal and vegetable kingdom, it is difficult to mark the boundaries; so in the classing of diseases, nosologists will ever be perplexed when they undertake to ascertain where one order should begin, or another terminate.

With Dr. CULLEN I had placed *Erysipelas* in the third order EXANTHEMATA. But with these it cannot agree, because 1. it is not contagious; 2. it is evidently inflammatory, as appears by the pulse, the blood,

blood, the treatment required, and its termination, which is sometimes in suppuration. I have therefore restored it to the Phlegmasiæ.

It may be remarked, that although the natural tendency of *phlegmon* is to suppuration, and of *Erysipelas* to gangrene; yet in our indications of cure we must be guided by *the diathesis*, whether sthenic or asthenic; for it has been frequently observed, that by injudicious treatment and want of attention to the strength or weakness of the system, phlegmon has terminated in gangrene, and erysipelas has been rendered more rapid in its race to sphacelus and death.

In both these species, if the pulse is full, hard, and strong, we must attend to the fourth general indication in the cure of inflammation, and must be particularly careful to evacuate the bowels, that we may leave no fomes of the fever there.

This may be effected by the refrigerant and emollient species of cathartics mentioned in my *Physician's Vade Mecum*.

Some practitioners have been so apprehensive of Typhus and gangrene, that they have rejected evacuates, with every part of the antiphlogistic regimen, and, suffering the attendant fever to run high, they have thereby hastened the evil they were anxious to avoid.

If the pulse is small, weak, and frequent, rising to 120 or 130 in a minute, with symptoms of nervous weakness and distress, we must conform to the

indications of cure already mentioned in passive inflammation.

In case of *delirium*, attention must be paid to what has been said respecting it in Synocha and Typhus.

Should *gangrene* supervene, bark, wine, and opium, must be freely given till its progress is checked by active inflammation.

For this purpose the dose of opium must be increased and repeated frequently without fear, should even one grain be requisite every fifteen or twenty minutes for some hours, or, in a word, till it procures repose.

Genus V. *Ophthalmia*.

Inflammation of the Eyes.

OPHTHALMIA may be readily distinguished by the redness and pain of the eye, intolerance of light, with effusion of tears.

It is divided into two species.

1. *Ophthalmia Membranarum*, with inflammation in the coats of the eye, most commonly in the tunica conjunctiva.

2. *Ophthalmia Tarsi*, with small ulcers in the sebaceous glands of the tarsus discharging a glutinous matter.

For the proximate cause I must refer to what has been already said on inflammations; and with respect to the indications, the student may look to those recommended in active inflammation.

But to be more particular I must observe, that the cure of *ophthalmia membranarum* may be effected in four ways.

1. By the application of *cold water* promoting evaporation and absorption of heat, to be continued for half an hour at a time.

2. By *electricity*. Either drawing sparks, or by sending the electrical aura to the part affected.

This gently stimulates the living fibre; but violent shocks would suddenly exhaust its vital energy.

When this operation has cleared the eye from inflammation, some tonic application must be used to brace the fibres and prevent relapse.

This may be a weak solution, either of white vitriol, or of sugar of lead in rose-water; to which may be added a few drops of brandy.

3. Mr. Wathen puts a drop or two of tincture thebaica once or twice a day into the eye.

4. From long and most successful experience I would recommend the following ointment:

Take hog's lard four ounces, with the finest powder of lapis calaminaris one ounce. Let these be intimately mixed over the fire, then add honey two ounces.

A bit,

A bit, as big as a pea, must be rubbed upon the interior surface of the eyelid, at the time of rest; and washed off the next morning with milk and water.

The patient, in the application of this ointment, will have need of patience; for at night the scalding tears will run down his cheek in copious streams, and the next morning his eye will be much weaker than it was before.

But the consequence of this discharge will be a diminution of the inflammation, and in two or three nights at most the cure will be effected.

As for the *ophthalmia tarfi*, which Mr. Wathen very justly calls *glandulae sebaceae exulceratae*, I can say with truth, that his mode of applying the unguentum citrinum of the Edinburgh Pharmacopœia has never failed with me. From his grandson, one of the best operators in Europe, *Mr. Wathen Phipps*, I learnt the mode of application. A little of this ointment, melted by a candle, is taken upon a pencil brush and spread along the eyelids.

If it be done in the morning, the patient may take a walk in the air soon after the ointment has creased its operation.

All hoods should be avoided.

Genus VI. *Phrenitis*.*Phrensy*:

THE symptoms are strong fever, violent headach, redness of face and eyes, impatience of light and noise, watchfulness and furious delirium.

These symptoms evidently require copious bleeding; blisters to the head, the antiphlogistic regimen, evacnants of the refrigerating species, and warm fomentations with sinapisms to the feet.

Genus VII. *Cynanche*:*Quinsey*:

THE symptoms are pain and redness of the fauces; deglutition and respiration difficult: It is accompanied by Synocha.

Five species are comprehended in this genus, but the generic description applies in strictness only to the two first.

1. *Tonsillaris*, affecting the mucous membrane of the fauces, but more especially the tonsils.

2. *Maligna*, deglutition less difficult; a mucous crust of whitish or ash colour covers the tonsils and mucous membrane of the fauces, which are affected with spreading ulcers. These symptoms are accompanied with Typhus, and followed by Exanthemata.

3. *Trachealis*. Respiration difficult: cough loud; no apparent tumour in the fauces.

4. *Pharyngæa*, affecting the pharinx and œsophagus.

5. *Parotidæa*, affecting the lower jaw.

The two first species, tonsillaris and maligna, have different diatheses, and must be carefully distinguished. For this distinction we are much indebted to the late Dr. FOTHERGILL, who by it has laid the foundation for rational indications, and a successful practice, in the treatment of them both.

SECTION I.

Of *Cynanche Tonsillaris*, or *Quinsy*.

THIS, called by some *angina inflammatoria*, is a disease of the sthenic diathesis, with the pulse full, hard, strong, and about 100 in a minute. The attendant fever is Synocha.

It is an active inflammation, of which I have stated the proximate cause to be local irritation, with morbidly increased action and excess of oscillatory motion in the arteries of the part affected.

This being the proximate cause, the indications of cure must be precisely such as have been already mentioned generally in Synocha and in active *inflammation*, with the addition of cooling and detergent gargles.

These may be composed of either honey and water, or a decoction of figs lightly acidulated with vinegar, or instead of vinegar a few drops of spirits of hartshorn may be used.

A flannel, moistened with volatile liniment, composed of sweet oil two parts, with spirits of hartshorn one part, as recommended by Sir JOHN PRINGLE, may be applied to the throat at night, or a blister may supply its place.

During the day, *sal prunel.* may be frequently kept melting in the mouth, and for this at night may be substituted sugar of liquorice to moisten the throat.

Should an abscess be formed, which the lancet cannot reach, an emetic will assist to break it.

SECTION II.

*Cynanche Maligna.**Ulcerated Sore Throat.*

THIS, called by some *angina maligna*, is a disease of the asthenic diathesis, with the pulse small, weak, and about 130 in a minute. The attendant fever is a Typhus, and the disease itself should properly appear under *scarlatina* as an accidental symptom.

It is a passive inflammation, of which I have stated the proximate cause to be loss of tone, relaxation, debility, a deficiency of vital energy, and diminution of resistance in the vessels of the part affected.

It is, perhaps, not, properly and strictly speaking, inflammation, but distention.

It requires the general treatment recommended in the cure of Typhus and of passive inflammation, with the addition of antiseptic gargles.

These may be composed of myrrh, alum, tincture of roses, &c. in the subsequent forms :

℞ Tinct. Rosar. ℥ 8. Acid. Vitriol. gtt. 10. Alum. 3℥s.

Tinct. Myrrh. ℥j. M. f. gargarismus.

That is,

Take tincture of roses eight ounces, vitriolic acid ten drops, alum half a dram, tincture of myrrh one ounce. Mix for a gargle.

Emetics

Emetics are sometimes necessary to clear the first passages; but cathartics increase debility and aggravate the symptoms.

The principal dependance must be on bark and port wine.

In the beginning of this disease Mr. WATHEN touched the ulcers with a solution of mercury, which is thus prepared:

Take quicksilver and corrosive sublimate of each one ounce; triturate and mix them well together.

Put this into a tall phial, and cover it with distilled vinegar, and shake it for an hour. Let it settle, and then, pouring off the clear solution, put on more vinegar as long as the fresh solutions precipitate a white cloud, with spirits of hartshorn.

A bit of lint rolled on a probe, and made wet with this, must be applied to every ulcer, and repeated the next day, unless they look red.

Should the sloughs by neglect have been suffered to become large, and should they cast off slowly, they may be touched with either the mercurial solution, or with Mel. Ægyptiacum.

SECTION III.

*Cynanche Trachealis.**The Croup.*

THE pathognomic symptoms are, respiration difficult; cough stridulous and loud; no apparent tumour in the fauces.

There cannot remain a doubt, that this species of cynanche, so fatal to young children, is inflammatory; and that the membrane, which covers the trachea, is concreted mucus.

I have met with it in Scotland, and seen it treated with success; but I never observed a single instance of it in the vale of Pewsey.

In Dr. Hunter's museum you may see a beautiful specimen of this membrane; which evidently covered the upper part of the trachea, and extended into its ramifications, so as to merit the appellation, which Dr. Michaelis has given it, of *polyposa*.

The seat of the disease appears to be the mucous membrane, which produces a kind of exudation, similar to that which we observe on the surface of inflamed viscera.

The method of cure which hitherto has been found most effectual, has been that first recommended by Dr. Home. Copious bleeding and emetics, with a large blister applied as near as possible to the
part

part affected, followed by every part of the anti-phlogistic regimen.—But Dr. THORNTON has lately discovered a more expeditious method of checking the inflammation by the inspiration of *azotic air*.

Mrs. Tovey, of Charles-street, Tottenham-court Road, having lost one child in this sonorous and terrific disorder, anxiously brought her only remaining boy to Dr. THORNTON for his advice. He immediately made the child inhale the *azotic air* with a proportion of common air, and the father and mother were surprised, when they observed that the hands, which were before “*parching hot*,” soon felt “*cold*” to the touch; the pulse was rendered 20 beats less in a minute; the child no longer coughed as through a brazen trumpet, the fever seemed smothered, and the formation of the fatal membrane was prevented.

SECTION IV.

Of Cynanche Pharyngæa.

THIS species, compared with *cynanche tonsillaris*, appears to me, as far as relates to medical practice, to be a distinction without a difference.

SECTION V.

*Cynanche Parotidæa.**The Mumps.*

It is a swelling under the jaw extending over the neck, and declining the fourth day ; epidemic and contagious.

As the attendant fever is slight, no medicine is required.

Genus VIII. *Catarrhus.*

CATARRH in my nosology was genus XXXIV, and stood in the fifth order, *Profluvia*, of this class. There, in submission to my master, I had placed it. But, as it evidently belongs to the PHLEGMASIÆ, I have restored it to its proper order.

The symptoms are, increased excretion of mucus from the membrane of the nose, fauces, and bronchiæ, with pyrexia, attended by cough, thirst, lassitude, increased sensibility to cold, and want of appetite.

SECTION I.

OF COLDS AND COUGHS.

CATARRH, by a metonymy, putting the supposed cause for the effect, has been called *a cold*.

The expression is improper ; because to the same agent we are equally indebted for Synocha, local inflammations, dysentery, and a vast variety of evils.

It has been called by some a *cough*, taking the denomination from one symptom. This expression is equivocal, because a cough is a symptom common to a variety of opposite diseases.

SECTION II.

PROXIMATE CAUSE OF CATARRH.

THE proximate cause of a catarrh, as it appears to me, is the same with that of active inflammation.

The morbid irritation, and excess of oscillatory motion in the arteries, with quickened circulation of the fluids, produce increased discharge of mucus from the glands of the nose, fauces, and bronchiæ.

This disease is therefore with propriety restored to the order of *Pblegmasiæ*.

SECTION III.

OCCASIONAL CAUSES OF CATARRH.

As to one occasional cause Dr. BROWN has said, *Catarrhum igitur e frigore esse, calore solvendum, gravissimus error est. Contra frigus nunquam nocet, nisi ubi ejus actionem calor excipit.*

And a rising Genius, equally distinguished for his ardour in pursuit of science, for his chemical knowledge, and for medical abilities, has suggested, that neither catarrh nor inflammation are the consequence of wet and cold, either sudden or continued, but that both are induced by *subsequent* heat, exercise in the day, and stimulants.

He is of opinion, that keeping quiet and cool for some time, after being wet in summer; by avoiding a sudden transition into a warm temperature in cold weather; and by temperance in both cases, these inflammatory diseases, for which cold only prepares the system, may be easily avoided; and that any person by acting on these principles may have a slight, a violent, or no catarrh.

I have already hazarded some observations on the powers of heat and cold in the production of diseases; but, in addition to what I have delivered on that subject, I must venture to suggest some further hints to the consideration of *philosophical* practitioners.

The heat of the body is stated to be 98 degrees of Fahrenheit's thermometer, sinking, however, by disease to 94 degrees, or perhaps lower ; and rising to 110 degrees, and in certain circumstances higher.

This temperature nearly, is preserved when the surrounding medium is either 120 degrees below blood heat, or 160 degrees above it ; as appears by the beautiful experiments of Dr. George Fordyce.

It is evident, therefore, that this temperature, so obstinately maintained, must be essential to the well-being of the system, and that the body has some inherent power in itself to regulate and preserve it, within certain limits, from noxious extremes of either heat or cold.

The generation of *animal heat*, as I have already hinted, and as it has been proved by others, is from the decomposition in the lungs of vital air. Now, in proportion to the condensation of the atmosphere by cold, the quantity of vital air inhaled by every inspiration is increased ; and, in proportion to the cold, the appetite for substances which abound with hydrogen is equally increased. But, as it is evident, that animal heat, within certain limits, rises in proportion to the quantity of these substances received into the stomach, does it not, therefore, follow, that hydrogen, abounding in the system, promotes decomposition of vital air ?

By these means, therefore, nature endeavours to preserve the temperature of the body when that of the surrounding medium is below 98 degrees.

As to the process by which the generation of superabundant heat is prevented, that may be readily conceived by what has been suggested respecting cold.—But the principal resource is from copious perspiration, evaporation, and the consequent absorption of the generated heat.

Let us now return to cold, allowing to Dr. BROWN and highly approving what he has said respecting heat.

When the application of cold is sudden, as when the body is immersed in water, the means of generating heat, already stated, can give no help. What effort then does nature make to relieve herself? The pores are strongly closed; a constriction takes place in the extreme vessels on the surface of the body; the blood is propelled with increased momentum to the heart, and, supposing the body to be now emerged, the reaction of the heart, sending back the blood to the surface, diffuses a genial warmth, and removes the stricture. The enemy is repelled; he has retired to a distance, and the gates are again set open to the citizens.

Should the stricture continue, this effort of nature to relieve herself will terminate in fever.

Such is the effect of sudden cold, when its application is universal: but should the application be partial, what will be then the consequence? The effects already stated will be *partial*. Constriction will take place in the extreme vessels subjected to the access of cold, and the blood will be propelled
with

with increased momentum into the adjoining vessels, where tension will prove a stimulus, and be, as already stated, the proximate cause of inflammation. This, for reasons assigned above, must be afterwards increased by heat.

When a lady, who has been heated by dancing, either sits near to a window, through which penetrates a cold and partial draught of air, or, although wrapt up in furs, inspires, instead of warm, a cold and humid air: or when a reaper reeking with sweat, either drinks cold water, or lies down to sleep upon the humid grass; the injury is perceived before the cold has alternated with heat, although the subsequent heat, in proportion to its intensity, increases the disease.

It is allowed, and has been stated, that the accumulation of irritability as the predisponent cause may with heat produce inflammation: but I apprehend, that a state of exhaustion, whether induced by poverty of diet, fatigue, previous disease, copious evacuations, or by any other means, as a predisponent cause, with cold suddenly and partially applied, if continued, may produce the same effect.

On the whole then it appears, that if the change be gradual, nature between wide extremes can accommodate herself to her condition; but that when the change is partial, sudden, and continued, it generates disease.

In catarrh the parts immediately affected are, the mucous glands of the nose, the fauces, and the bronchizæ;

chiæ; but by consent the stomach shares with them in the disease, and its glands pour forth a viscid mucus in abundance. Hence the febrile symptoms, thirst, lassitude, and loss of appetite. Hence also, by the progress of sympathy, the increase of irritability which shuns every breath of air.

Although heat and cold are most frequently the occasional causes of catarrh, yet they are not always so; for sometimes it is contagious.

The epidemical catarrh, whenever it appeared, spread from province to province till it had extended over Europe, or even crossed the Atlantic to America. In the last of these I had the most striking demonstration, that it was contagious; for during its progress from the East, I was at St. Agnes in Cornwall, but before it reached us I removed with all my family to Lanlivery. There we continued safe while the disease was spreading in the parish of St. Agnes, and on our return we found that few persons had escaped; but that it had quitted them, and was extending westward to the extremity of Cornwall.

Dr. CULLEN has collected a register of epidemical catarrhs to the amount of twenty-five between the years 1323 and 1767; but other practitioners have greatly increased this list.

SECTION IV.

INDICATIONS OF CURE IN CATARRH.

THESE are the same as in active inflammation; but as, unless by improper treatment or neglect, it seldom puts on a formidable aspect, it is most frequently sufficient to avoid the occasional causes of the disease, and gently to evacuate the alimentary canal.

Various *expectorants* have been recommended by practitioners, such as oily emulsions and the like; but these tend rather to aggravate, than to relieve, the symptoms. The only medicines, which can render essential service in catarrh, are such as

1. Determine to the surface.
2. Cleanse the alimentary canal.

Both these intentions are effectually answered by the subsequent prescription.

℞ Flor. Sulph.
 Pulv. Enuclæ.
 — Glycyrr. āā un. i.
 Mel. despumat. un. 4. M.
 c. c. M. N. M. ter in die.

That

That is,

Take flowers of sulphur, powders of elecanipane and liquorice, of each one ounce; clarified honey four ounces. A bit as big as a nutmeg is to be taken three times a day.

This, in the space of thirty years, I have prescribed to many hundred patients, and in some protracted, obstinate, and most distressing cases; yet I can affirm, that in no instance, as far as I can recollect, has it ever failed to cure.

With the same intention Dr. THORNTON gives gives $1\frac{1}{2}$ ounces of syrup of white poppies mixed in a pint of linseed and liquorice tea, and at night 10 grains of rhubarb.

SECTION V.

OF SYMPATHETIC COUGH.

DOCTOR WHYTT, in his treatise on nervous disorders, makes mention of a cough proceeding, not from phlegm, obstruction, or other irritating cause in the lungs themselves, but from sympathy with some other part, whose nerves are disagreeably affected. In confirmation of this, he relates several curious and most interesting cases, to which I must refer the student.

IN my compendium of nosology, under *catarrh* I have made mention of

1. *Tussis exanthematica*,
2. *Tussis verminosa*,
3. *Tussis a dentitione*,
4. *Tussis arthritica*;

which are the only four I thought it expedient to notice.

These are taken from Sauvage; but I should have added from his inestimable work

5. *Tussis stomachalis*.

SECTION VI.

Tussis Exanthematica.

THIS species SAUVAGE has taken from Fr. Hoffman, who calls it *Tussis Serina*, and attributes it to eruptions suppressed by ill timed repellents; as in cases of the scald head and the itch. The symptoms are violent in the extreme, and the convulsive cough produces the most direful effects, such as apoplexy, palsy, loss of memory, and phthisis pulmonalis.

For this, HOFFMAN recommends blisters; bathing the feet in warm water; and flowers of sulphur with diaphoretic antimony, to be taken at night.

A most ingenious friend of mine, a young physician, has lately effected a cure by inoculating a patient of his, who appeared in the last stage of a consumption, with the *itch*, which he knew had been injudiciously repelled.

SECTION VII.

Tussis Verminosa.

OF the *worm cough* I have already spoken at large in the case of Thomas Winter.

SECTION VIII.

Tussis a Dentitione.

THE *teething cough* may be relieved by frequent doses of rhubarb with magnesia, or cured by cutting through the gum to give an easy passage for the tooth.

SECTION IX.

Tussis Arthritica.

THE accurate investigation of this cough, as symptomatic of retrocedent *gout* and not a primary disease, brought into extensive practice a friend and fellow-student of mine, established for the last thirty years in Chester, where he dispenses health, whilst, by communicating freely his ideas and medical improvements to the world, he extends the boundaries of science.

For the mode of treatment I must refer the student to *Arthritis*.



SECTION X.

Tussis Stomachalis.

PROFESSOR HOFFMAN has well established both the diagnosis and the cure of *stomach cough*.

This disease may be distinguished from catarrh, by not having the cough and difficulty of breathing excited, either by deep inspiration, or by exercise and muscular exertion; by absence of hoarseness; by facility of lying indifferently upon either side; by long intervals between the fits of coughing; by

violence of coughing and expectoration after taking food ; by indigestion, nausea, vomiting, and depraved appetite ; by costiveness, acidities, flatulence, and spasmodic affections.

Sauvage remarks that Lindanus, who first described the *stomach cough*, distinguished it from the true pulmonary cough by its deep and hollow sound.

Of this species of cough Hoffman has described two varieties, the *humid* and the *dry* ; but as these arise nearly from the same cause, and require the same indications of cure, I shall consider them as one disease.

He subjoins a very valuable practical remark : *Generatim vero illud monendum est, quod omnis tussis quæ est periodica ; à Saburra in ventriculo, vel potius intestino duodeno stabulante, suos mutuatur natales.*

From attentive observation I must here observe, that this affection of the stomach is sometimes complicated with a primary affection of the lungs.

Such is the sympathy between these organs, such their correspondence and consent, that a disease, seated originally in one, may be quickly injurious to the other.

If the mucous glands of the one are morbidly excited, those of the other may be drawn into action by consent.

But here it is needful to consider in these affections, what are the efforts of nature to relieve herself.

When

When any acrid or offensive matter irritates the fauces, if it is near the larynx, a cough is excited, that by a full, a sudden, and a violent, expiration it may be removed. But if it is in the pharynx, vomiting ensues, that by a copious stream it may be washed away.

When viscid mucus stimulates the bronchiæ, the irritation is communicated along the larynx, and a cough, that is a convulsive expiration, clears the passages. But when the stimulus is in the stomach, the irritation is communicated along the œsophagus, and either vomiting immediately ensues, or, this irritation extending by the fauces to the larynx, a violent spasmodic cough precedes, a vomiting ensues, and, the stomach being freed from the offending matter, the cough subsides.

This effect is visible in chin-cough, and may be equally remarked in the disease before us.

Of this I have seen many instances; but I shall refer only to the case of a lady, whom I had lately the honour to attend.

THE disease began with a sense of cold and shivering, soon followed by heat. The pulse was small, weak, frequent; and there was some degree of soreness on the chest.

These symptoms were succeeded by a cough, with increased excretion of mucus from the nose, fauces, and bronchiæ.

The cough was violent, and remarkable for its deep and hollow sound. No thirst. No appetite. Rather costive. Weak, and confined to bed.

In this case, the judgment which I formed was supported by previous knowledge of the lady's constitution, whom I had frequently attended.

I began with a powerful emetic. This brought off near a quart of mucus, so viscid that it might have been drawn out to a great extent.

The next morning I repeated the emetic with similar effect; but towards evening the cough was again aggravated, although the defluxion from the nostrils and the soreness on the breast had ceased.

In this way she passed a second and a third sleepless nights, for the cough became incessant.

Early on the fourth day I repeated the emetic, which brought off a substance, to appearance membranous, and bearing resemblance to the finest leather of which French gloves are made. Instantly the cough ceased; every uneasy symptom vanished; her appetite returned, and, without any other medicine, in two days from this she was down stairs again.

The cough in question is by Dr. Stoll, of Vienna, in his *Ratio Medendi*, called *Tussis Stomachica*, and appears to be the same with that described by Dr. PERCIVAL, under the name of *Tussis Convulsiva*, which succeeded the croup in a boy of three years old. He remarks, that such a membrane as is formed in the trachea of a patient, who labours under *cynanche trachealis*, is sometimes generated in the *intestines*. I saw the membrane, which came from the stomach of my patient, and in substance it perfectly resembled that which Dr. Hunter exhibited in his class, when he was describing *cynanche trachealis*.

SECTION XI.

INDICATIONS OF CURE IN TUSSIS STOMACHALIS.

IN many diseases the efforts of nature to relieve herself are sufficient, without the aid of medicine. In fever, in the exanthemata, in catarrh, even left to themselves, the course of a few days may put a period to the disorder : but the duration of the stomach cough, without assistance, is usually protracted, and the termination may be either atrophy, or, if the lungs are injured by the violence of reiterated cough, it may end in phthisis.

From what I have said it will be clear, that the indications of cure must be,

1. To cleanse the stomach and first passages from indigested food, and more especially from viscid mucus.

2. To restore the tone.

The first intention may be answered by emetics. To this nature points by her repeated efforts. But should these be insufficient to cleanse the duodenum, calomel will give relief, or this may alternate with rhubarb, fenna, and soluble tartar.

Or the prescriptions, 12, 13. 18. in my compendium of therapeutics, may be employed.

The second intention may be answered by bitters, bark, and steel, combined.

For the bitter we may take, either the tinctura amara, or a strong infusion made of quassia with half the quantity of cassia lignea.

Or to these may be joined the bark, either in substance or infusion; or we may combine them in the following form:

℞ Cinchon. un. 1. Limat. ferri, dr. $1\frac{1}{2}$. Myrrh. dr. 2. Syr. Cort. Aurant. q. s. f. Elec. c. c. M. N. M. ter in die.

That is,

Take bark one ounce, iron filings a dram and an half, myrrh two drams, syrup of orange-peel sufficient to make an electuary. Dose the size of a nutmeg three times a day.

℞ Cinchon. Ferri Rubiq. $\bar{a}\bar{a}$ un. 1. Pulv. Aromat. dr. 2. Conserv. Cort. Aurant. un. 2. Syr. Zinzib. q. s. f. Elect. c. c. M. N. M. ter in die.

That is,

Take bark and rust of iron of each one ounce; aromatic powder two drams; conserve of orange-peel two ounces; syrup of ginger sufficient to make an electuary. Dose as in the former.

Or the student may adopt any one of the prescriptions, 76. 78. 80, 81, 82, 83. from my compendium.

Genus IX. *Pneumonia,**Pleurisy and Peripneumony.*

THE symptoms are, Pyrexia, difficult respiration, cough, pain in the thorax, pulse frequent and hard.

SECTION I.

OF THE DISTINCTIONS TO BE OBSERVED.

THE student must not be deceived by pain in the region of the thorax, for if there should be no Pyrexia and no cough, it is not pneumonia, but spasm.

Should any doubt remain upon his mind, after he has felt the pulse, he may apply a little ether to the part affected, with his hand, which will generally relieve spasm, if it is in the intercostal muscles; and let him give the patient some magnesia with mint water, which, if the spasm should arise from flatulence and an affection of the stomach, will cause an eructation and relieve the pain.

I am the more earnest in this caution, because I have been witness to a number of mistakes, and some of them rendered very troublesome, by the injudicious conduct of ignorant practitioners.

SECTION II.

INDICATIONS OF CURE IN PNEUMONIA.

It might be sufficient to say, that the indications are the same as already stated generally in the cure of active inflammation; but for the sake of younger students I shall be more particular, still requesting them to consult what has been there delivered on that subject.

Since then Pneumonia is a disease of the sthenic diathesis, not of the asthenic, and rather connected with Synocha than Typhus; it is clear, that the tension of the vessels must be diminished.

This intention may be fulfilled

1. By *bleedings*, to be repeated till the tension is removed.

Topical bleeding ought naturally to be preferred to general; but as a sufficient quantity of blood cannot suddenly be obtained by leeches, or by cupping, we are obliged to use the lancet.

Whilst the blood is flowing from a vein, let the student put his finger to the artery, and if he finds the pulsations less frequent, and the pulse itself becoming fuller and softer under the touch; if he finds at the same time the pain in the affected part diminished, and the cough less troublesome; he may be certain

certain that he is right, and may with confidence repeat the bleeding, should a repetition be required.

2. By *cathartics* taken from the refrigerant and emollient orders.

These answer a two-fold intention ; by diminishing the tension of the vessels, and by removing the fomes of the fever ; for we have seen that fordes in the alimentary canal proves a powerful stimulus to the arterial system.

Such cathartics, therefore, must be resorted to ; and although at first they may increase in some degree the general irritation, yet by the evacuation they will sink the pulse. But in the progress of the disease emollient clysters must supply their place.

Practical authors will inform the student, and experience will confirm their observation, that in this disease *blisters* are highly beneficial.

They must be large, and applied as near as possible to the part affected.

It is remarkable, that in pneumonia a large blister lessens the number of pulsations more, after the vessels have been properly emptied, than a copious bleeding.

Cooling and attenuating medicines must, at the commencement of pneumonia, be administered with a liberal hand. Such may be, the saline julep ; the sp. mindereri (ammonia acetata) ; rose-water, with nitre, vinegar, and sugar ; or the prescriptions from

84 to 90, in the class Demulcentia, may be taken from my *Physician's Vade Mecum*.

The patient should be likewise plentifully supplied with barley-water, butter-milk, whey, and acidulated drink.

He must abstain from animal food and from fermented liquors.

These directions relate principally to the five first days of the disease, for if the fever has been suffered to run high, suppuration, or gangrene, or hydrothorax, will then take place, and therefore bleeding would be injurious in the extreme. A near approach to those dreadful terminations may be discerned, by cessation from pain, shivering, cold sweat, and a weak intermitting pulse.

Should the patient about the third or fourth day spit up a concocted matter, bleeding would stop this salutary evacuation; but should he either expectorate pure florid blood, or should he relapse after having been relieved from the most distressing symptoms, bleeding will be indispensably needful.

In the conduct of evacuations, but more especially of bleeding, the student must be governed by the pulse, the strength of the patient, and the urgency of the symptoms.

Under proper management pneumonia should yield in seven days; but should the disorder be protracted, it may either terminate about the fourteenth day in *empyema*, or produce a *hectic* with phthisis pulmonalis.

When

When expectoration comes on, the sulphur electuary recommended in catarrh, or any of the formulæ from 48 to 51 of *expectorantia* in my compendium, may be added.

I have never had an opportunity of trying the method of cure recommended by Dr. Hamilton of Lynn, who, after bleeding and having emptied the bowels by clysters and gentle purgatives, gives calomel and opium twice or three times a day. To these he sometimes adds camphor and tartarized antimony.

From observing the effects of atmospheric air, when either superoxygenated, or when mixed with azotic air, as administered under the skilful direction of Dr. THORNTON, and as recommended in a most interesting publication of Dr. BEDDOES on scurvy and phthisis pulmonalis, I am persuaded, that the inspiration of either *azotic* or of *carbonic acid air*, mixed in due proportion with common air, may be highly beneficial in cases of pneumonia.

Genus X. *Carditis*.

Inflammation of the Heart.

THE symptoms are, Pyrexia, pain in the region of the heart, anxiety, difficult breathing, irregular pulse, palpitation, fainting.

The

The inflammation of the heart and that of the peritonæum have been distinguished by nosologists; but the medical practitioner needs no such distinctions where the indications are the same. What, therefore, has been delivered on *pneumonia* is equally applicable to *carditis* and *peritonitis*.

Genus XI. *Gastritis*.

Inflammation of the Stomach.

THE symptoms are, Pyrexia; anxiety; heat and pain in the epigastrium, increased when any thing is taken into the stomach; vomiting; hickup; pulse small, frequent, hard, and contracted; prostration of strength.

It has been distinguished into two species;

1. *Phlegmonic*, affecting the external coat.
2. *Erysipelatous*, seated in the interior and villous membrane.

The proximate cause is the same as that of active inflammation; but such is the irritability of the part affected, that the tendency is rather to gangrene than to suppuration.

The occasional causes may be,

1. Contusion.
2. Cold liquids drank, when the body has been heated by exercise.
3. Acrid substances, received into the stomach and acting chemically there.
4. Something acting mechanically and lacerating the coats of the stomach.
5. Distention.

For the indications of cure I must refer the student to what has been said on active inflammation.

But as twelve hours may bring the patient to his grave, it is evident that no time is to be lost in diminishing the tension of the vessels in the most speedy and effectual manner, which is by copious bleeding.

To this the smallness and hardness of the pulse will be no objection; for it will become softer and fuller by the loss of blood.

A blister should be applied to the region of the stomach.

Emollient clysters must be injected often, and if the stomach will receive them, demulcents should be given in abundance.

The nature of the acrimony, if acrimony should be the cause, must be understood, and its antidote must be applied.

In case of mechanical injury demulcents must be adopted, whilst whatever can irritate must be carefully avoided.

Genus XII. *Enteritis.**Inflammation of the Bowels.*

THE symptoms are, Pyrexia, fixed pain in the abdomen, costiveness, vomiting; pulse as in gastritis.

This disease, distinguished from the precedent by nosologists; can scarcely be distinguished by the medical practitioner; yet in addition to what has been delivered on *gastritis*, I must add, that many eminent physicians, after bleeding as occasion may require, and having emptied the bowels by clysters and emollient cathartics, give calomel, nearly in the manner recommended by Dr. Hamilton, who combines it with opium in this form:

R Calomel, gr. 5. Opii, gr. 1. bis terve in die.

With this plenty of tepid and demulcent drink must be administered.

Genus XIII. *Hepatitis.**Inflammation in the Liver.*

THE symptoms are, Pyrexia; tension and pain, more or less acute, in the right hypochondrium, usually referred to the top of the right shoulder and extended to the clavicle, increased by lying on the left side; urine high coloured; pulse frequent, strong, and hard. Bilious evacuations increase unless jaundice takes place.

It acknowledges the same proximate cause with active inflammation.

It is common in warm climates.

With regard to the method of cure, as it tends to suppuration, it will admit of bleeding freely, and of the antiphlogistic regimen without restraint.

Moderate cathartics must be used, and these may be taken from the refrigerant and emollient orders; as for example:

R Infus. Sen. un. i.

Polychrest. Rupel. dr. 4. M. c. m.

That is,

Take infusion of senna one ounce, sal. polychrest half an ounce, in the morning.

Or soluble tartar about half an ounce may supply its place, unless the student should prefer to both, the combination of sulphur and cremor tartari, as in the 18th prescription of my Vade Mecum.

Blisters must be applied to the right side on the region of the liver, and all the directions given above for the cure of active inflammation must be strictly observed.

The natural tendency of inflammation in the liver is to suppurate, and should this take place the discharge may be, by the lungs, by the intestines, by the cavity of the abdomen, or through the peritonæum to the surface of the belly.

In these cases hectic ensues, and the patient without assistance dies.

When the inflammation is on the convex surface of the liver, the effort of nature to relieve herself is, to form an adhesion with the peritonæum, that she may discharge the pus externally, then to granulate new flesh and heal the wound.

In this, her efforts must be assisted by fomentations, and the abscess must be opened by the lancet.

To support the powers of life during the suppuration, the Peruvian bark must be freely used, and the dose must be increased to the utmost the stomach can endure.

Here, as in other cases of inflammation, calomel has been used with remarkable success; but bleeding, the refrigerant cathartics, and the antiphlogistic regimen, must constantly precede it.

Should a schirrus be formed in the liver, a gentle salivation, continued for a length of time, will often prove sufficient to remove it.

Genus XIV. *Splenitis.*

Inflammation of the Spleen.

THE symptoms are, Pyrexia; tension, heat, tumour, and pain, in the left hypochondrium, increased by pressure.

The proximate cause and the indications of cure must be derived from what has been above delivered generally of inflammation.

The student must be guided by the pulse, and judging of any case that may occur, whether it belongs to the *sthenic* or *asthenic* diathesis, he must conduct himself accordingly; adopting, in the former instance, bleeding with the antiphlogistic regimen; whilst in the latter he must have recourse to tonics.

Genus XV. *Nephritis.**Inflammation of the Kidneys.*

THE symptoms are, Pyrexia; pain in the region of the kidneys, and shooting along the course of the ureter; drawing up of the testicle; numbness of the thigh; vomiting; urine, commonly of a deep red colour, but pale and colourless as the disease increases, is discharged very often, and both with pain and difficulty; costiveness, and some degree of colic; pulse frequent, hard, and small.

The proximate cause and natural termination are the same as of inflammation in general.

The occasional cause may be, either heat or cold; it may be, either some acrid substance acting on the kidneys, or some external injury; but it is usually the irritation of calculi, which may be either in the kidney itself or in the ureters.

As the tendency is to suppuration, it admits of bleeding with the antiphlogistic regimen, and calls for emollient clysters, not merely to evacuate the bowels, but as a warm fomentation to the part.

When the pain is great, and has been long continued, tincture of opium may be added to the clysters.

Demulcents

Demulcents are required in abundance.

When the distress arises from calculi obstructing the ureters, relief may often be obtained from electricity.

For this purpose small and repeated shocks must be sent through the loins.

These have powerful effects, and generally promote the passage of the calculi into the bladder.

For further directions consult the Introduction to this order, with the first five Sections on the distinctions, cause, and cure, of inflammation.

Genus XVI. *Cystitis.*

Inflammation of the Bladder.

THE symptoms are, Pyrexia; tumor and pain in the hypogastrium; frequent and painful discharge of urine; tenesmus; pulse frequent and hard; extremities cold; sickness, vomiting, and delirium, ensue.

For the cure I must refer the student, as in the preceding article, to my observations on the order.

Genus XVII. *Hysteritis.*

Inflammation of the Womb.

THE symptoms are, Pyrexia; heat, tension, tumor, and pain, in the hypogastrium; pain in the os uteri, when touched; vomiting; delirium; and starting of the tendons.

Of this genus I may say precisely what I have already said on the preceding.

Genus XVIII. *Arthropusis.*

THE symptoms are, pain of the joints or muscles, deep, blunt, and of long continuance. The Pyrexia is slight at first, but commonly terminates in suppuration and hectic fever.

It is produced by the common causes of internal inflammation, or by strains and bruises.

The indications are the same as in hepatitis.

Genus XIX. *Rheumatismus**Rheumatism.*

THE symptoms are, Pyrexia ; pains in the joints, increased by the action of the muscles belonging to the joint ; heat on the part.

The blood after venesection exhibits an inflammatory crust.

SECTION I.

CAUSES OF RHEUMATISM AND DISTINCTION
OF SPECIES.

RHEUMATISM acknowledges the same proximate cause with the preceding genera, and requires nearly the same indications of cure.

It is distinguished into *acute* and *chronic*.

The *acute rheumatism* is preceded by shivering, heat, thirst, and frequent pulse ; after which the pain commences and soon fixes on the joints.

The predisponent cause must be sought for in rich blood, full vessels, and a rigid fibre.

The occasional cause may be, either the sudden application of cold, with rest, after long continued

heat and exercise, in constitutions not accustomed to such changes ; or it may be the sudden application of heat and stimulants after long continued cold.

It differs from other inflammations in as much as,

1. It terminates neither by suppuration nor by gangrene.

2. It is apt to wander, and being driven from one part it occupies another.

3. The attendant fever observes the quotidian type, with exacerbations and increase of pain during the evening and the night.

SECTION II.

INDICATIONS OF CURE IN ACUTE RHEUMATISM.

THESE may be taken generally from the indications which respect the order, and which the student must consult.

But to what has been there delivered, I shall here subjoin more particular directions.

This being a disease of the sthenic diathesis, does not merely admit of, but calls for, bleeding and the antiphlogistic regimen to its full extent.

The practice of Dr. Clarke, of Edinburgh, was, to confine his patients to their bed, where he kept them

them in a continued sweat for 48 hours; but Dr. Whytt adopted a different plan, by which he never failed to cure.

He bled frequently with numerous leeches applied to the joint affected; he cleansed the alimentary canal by refrigerant cathartics; and he put occasionally a blister to the part, forbidding at the same time the use of animal food and of fermented liquors.

This method I have found successful; but with it I always join small doses, repeated every morning, of antimonial powder.

The late Dr. FOTHERGILL gave great quantities of Peruvian bark on the first remission; but Dr. SAUNDERS, very judiciously improving on this practice, gives it immediately on the first attack: and, considering that acute rheumatism assumes the quotidian type of intermittents, I am inclined to think favourably of his practice.

I am much pleased likewise with the method of cure recommended by Dr. Hamilton. He begins with bleeding, then empties the bowels, and after that gives calomel with opium twice or thrice a day.

Were I to adopt the sweating process from Dr. Clarke, I should conduct it, with Dr. Hamilton, by opium, tartarized antimony, camphor, and calomel, united.

SECTION III.

OF CHRONIC RHEUMATISM.

THE chronic rheumatism has pain in the joints without Pyrexia.

It is distinguished into two species,

1. *Lumbago*, affecting the loins.
2. *Ischias*, or *Sciatica*, affecting the hip.

It is a disease of the asthenic diathesis, attended by paleness, diminished appetite, relaxation, debility, and torpor in the system.

It may be, either the bastard offspring of the acute, bearing the same relation to it as Typhus does to Synocha; or it may originate in strains and violent exertions.

The pains in acute rheumatism are increased by *heat*, but those of the chronic are increased by *cold*.

SECTION IV.

INDICATIONS OF CURE IN CHRONIC RHEUMATISM.

THE indication of cure is simply to support the vital energy of the system in general, and more especially of the part affected.

To

To answer this intention a generous diet, with wine and exercise, will be essentially needful.

Mercurials, with the volatile tincture of guaiacum, by perseverance may be regarded as infallible in this disease.

Of the tincture one dram is sufficient for a dose, to be repeated three times a day, or oftener as occasion may require.

Calomel, from two to five grains going to bed, may be given, either alone or in combination with opium and tartarized antimony.

The late Dr. Fothergill, who never failed to cure *sciatica*, gave every night six grains of calomel made into a pill with conserve of roses, to be washed down with the following :

R Aq. Alexit. ℥iss. Sp. Alexit. ℥iss.

Vin. Antimon. gtt. 30. Tinct. Thebaic. gtt. 25.

Syr. simp. 3j. M.

That is,

Take alexiterial water one ounce and an half; alexiterial spirit a dram and an half; antimonial wine thirty drops; Thebaic tincture twenty-five drops; simple syrup one dram. Mix for one dose.

The calomel may be diminished if it proves too cathartic.

This treatment is equally good in *lumbago*.

Bark and steel may be united with guaiacum to advantage, and may be given in this form :

R Cinchonæ,

℞ Cinchonæ, ʒj. Gum Guaiac. ʒss.
 Ol. Sassafras, ʒij. Limat. ferri, ʒj.
 Syr. Cort. Aurant. q. s. f. Elect.
 c. M. N. M. ter in die.

That is,

Take bark one ounce ; gum guaiacum half an ounce ;
 oil of sassafras two drams ; steel filings one dram ;
 syrup of orange-peel a sufficient quantity to make an
 electuary, of which the dose may be the size of a
 nutmeg three times a day.

Sea bathing is found useful.

Slight shocks of electricity sent to the part, or
 sparks drawn from it through flannel, will excite the
 vital energy ; and friction, by a flesh brush, will an-
 swer in a degree the same intention.

The part affected may be rubbed with tincture of
 cantharides, or with the most warm and penetrating
 of the essential oils. Or this form may be adopted :

℞ Camph. un. ʒ.
 Alcohol, ℥ss.
 Sp. Ether. un. i.
 Fellis bovin. ℥iiss. M.

That is,

Take camphor two ounces ; spirits of wine half a
 pound ; ether one ounce ; ox gall a pint and an half.
 Mix these for an ointment.

I am inclined to think, that *oxygen air* might
 prove of service in this disease.

Genus XX. *Odontalgia.**Tooth-ach.*

For this the radical cure is certainly the first to be recommended, if the tooth be in the least decayed.

A blister applied behind the ear is frequently sufficient to procure relief.

The subsequent prescription comes from Boerhaave :

℞ Camphor. ʒj. Opii, gr. 5.

Ol. Caryophyl. gtt. 10. Alcohol, ʒij.
digere & cola.

That is,

Take camphor one dram; opium five grains; oil of cloves ten drops; spirit of wine two drams: Digest, and strain.

Four or five drops on a bit of cotton may be put into the ear, and renewed in a quarter of an hour.

Or you may apply the following :

℞ Opii. Camph. . āā gr. 2. Ol. Caryophyl. Ol.
Menth. piperit. āā gtt. 2. M. f. Pil. ad dentem
applicanda.

That

That is,

Take opium and camphor, each two grains; oil of cloves and oil of peppermint, each two drops; made into a pill, and put into the tooth.

Should these applications prove ineffectual, the pain must be treated as rheumatic.

Dr Lister was often troubled with the tooth-ach, and he perceived it always arose from what he had eat not digesting well. Half a glass of brandy would generally remove the pain.

A young lady, who had been for some days exceedingly distressed and almost distracted with a tooth-ach, applied to me for advice. She had tried Boerhaave's Tincture, and had put a blister behind the ear, without the least relief. Her tongue was white, her pulse frequent and feeble. But the most remarkable symptom was the aggravation of pain, when her stomach was empty; and the freedom from it, when she had taken food. The teeth appeared sound. Considering this case not as rheumatic, but symptomatic, I gave her an emetic, which brought up some undigested fordes with a quantity of viscid mucus, and immediately the pain was relieved; and by proper management has not since returned.

Last summer I had a case at Southampton exactly similar to this, which was instantly and effectually relieved by an emetic.

Genus XXI. *Podagra*.

The Gout.

THE symptoms are, Pyrexia ; pain in the joints, chiefly in the great toe, and especially of the hands and feet, returning at intervals; previous to the attack the functions of the stomach are commonly disturbed.

SECTION I.

OF THE REMOTE CAUSES OF GOUT, WITH THE
DISTINCTION INTO SPECIES.

OF this disease four species are commonly enumerated.

1. The regular.
2. The atonic.
3. The retrograde.
4. The wandering.

But I shall consider them merely as tonic, or inflammatory ; and atonic, or nervous.

After multiplied discussions it appears to be universally agreed, that the predisponent cause of gout
is

is debility, and the occasional causes such as induce debility.

It seems to have some relation to NEUROSES, a class of disease to be considered in its place.

The connection between *dyspepsia* and the *gout* are too remarkable to escape the observation of practitioners, for they must have noticed,

1. That the latter is almost universally introduced by symptoms of the former.

2. That the same organ, the stomach, is the seat of both.

3. That both require the same indications to effect a cure.

It has been doubted, whether the latter is hereditary; and a physician of eminence, with the most benevolent intention, has laboured to support the negative. I am inclined to think that, strictly speaking, he is right; because the disease itself is not inherited: but, at the same time, it must be confessed, and he would be ready to acknowledge, that the disposition to both *gout* and *dyspepsia* are transmitted from parents to their offspring.

The predisposition may be transmitted, but if the occasional cause is wanting there is no disease.

The inflammation of gout is evidently an effort of nature to relieve herself; yet not, as many have imagined, by casting off a peccant humour; because when a regular periodical fit has spent its rage, and
left

left the patient with a comfortable hope of freedom from distress and pain for six, twelve, or four and twenty, months to come, for the application of any debilitating power, such as intemperance, fatigue, excessive evacuations, cold and humidity, or even the passions of the mind, will suddenly bring back all the symptoms, with the same degree of violence and duration, as if no previous fit had happened.

But whilst it is thus demonstrable, that nature does not relieve herself by casting off a morbid matter; it will not be easy to trace her footsteps, and precisely to point out the manner in which she accomplishes her purpose.

We cannot but observe, that the pain and inflammation of the gout produces cheerfulness and freedom from all the symptoms of dyspepsia. But beyond this we are not yet able to proceed.

SECTION II.

INDICATION OF CURE IN TONIC OR INFLAMMATORY GOUT.

If it is allowed, that pain and inflammation are the means made use of to relieve the habit from more dangerous and distressing symptoms, it must be evident, that these should be supported.

And, as we have nothing here to apprehend from suppuration or from gangrene, it must be clear, that we have the less inducement to hasten resolution. Yet, as pain and inflammation have a tendency to exhaust the vital powers, these must be kept within proper bounds.

To fulfil these intentions, little more is needful than to listen attentively to the voice of nature.

To bleed is hazardous in the extreme, and to give cathartics is far from safe; cold is injurious, and every part of the refrigerating plan has a tendency to convert the inflammatory into the atonic gout.

Yet to force the appetite with spices, or, under the idea of keeping the gout from the stomach, to drink a great quantity of wine, is adding fuel to fire, which may perhaps burn too fiercely at the time.

The body should be kept moderately open; the part affected should be wrapt in flannel, and gentle perspiration should be carefully encouraged.

To keep the body open the *Analeptic Pill* may be adopted, the form of which I received from the most intimate friend of Dr. James.

℞ Pil. Rufi, dr. 2.

Pulv. Jacobi, G. Guaiac. āā dr. 1.

Bals. Peruv. q. s. M. f. Pill. 48.

Cap. j. h. s.

That is,

Take Rufus's Pill two drams; James's Powder and gum guaiacum, of each one dram; Peruvian balsam sufficient to make forty-eight pills. Take one at night.

SECTION III.

INDICATION OF CURE IN THE ATONIC GOUT.

It is simply, as in passive inflammation, to support the vital powers.

This, according to the urgency of the symptoms, may be done by cordial stimulants, such as musk, opium, camphor, ether, wine, and aromatics; by tonics with astringents, such as bitters, bark, and steel; by the inspiration of oxygenated air, as practised by my friend Dr. Thornton; by animal food; by exercise, and by bathing in the sea.

A gentle emetic, interposed occasionally during the exhibition of these tonics, by clearing the stomach and first passages from viscid mucus, relieves the dyspeptic symptoms, and eventually promotes both digestion and nutrition.

In case of costiveness, either the Analeptic Pills, or one of the cathartics marked 21 and 22 in my compendium, should be used as occasion may require.

If the gout attacks the stomach or the head, give the following:

℞ Mistur. Camphorat. un. i. Ether ℥ss.

Capt. statim.

That is,

Take instantly camphorated julep one ounce, with ether half an ounce.

SECTION IV.

OF PRESERVATIVES FROM GOUT.

VARIOUS specifics have been recommended to the public, and have attracted attention for a time ; but in the issue they have all been proved to be either dangerous, or, at least, inadequate to the purpose for which they were intended.

The effect of bitters, if long continued, is to destroy the vigour of the constitution ; but bark and steel, if joined with regular exercise and strict temperance, may be used with safety, and bids fair, by obviating the predisponent cause, either to prevent the return of gout or to render it kindly.

Order III. EXANTHEMATA.

ERUPTIVE FEVERS.

THE character of this order stands thus ; contagious diseases, beginning with fever and followed by an eruption on the skin.



INTRODUCTION.

THE genera of this order have been reckoned seven :

Erysipelas, Pestis, Variola, Varicella, Rubeola, Miliaria, and Scarlatina.

Of these *Erysipelas* and *Pestis* have already been considered under FEBRES and PHLEGMASIÆ, to which they have been transferred.

The remaining five will be taken in succession.

But previous to this, I must request the student to recollect what has been delivered on *Synocha* and *Typhus* compared with *active* and *passive inflammation* ; because *such is the consistency of the plan pursued by nature in her efforts for relief ; such the unity of design in all the laws, to which the system is made*

subject ; such the analogy between diseases, although of different orders ; that of these, every one throws light upon the rest.

Whenever febrile eruption appears upon the skin, it will be of greater importance to determine, what is the nature of the attendant fever, than to ascertain the name of the disease. To this fever the attention should be turned, because from hence principally the indications of cure must be taken.

Should the fever be typhoide, tonics and cordial stimulants, in every case of *exanthemata*, will be needful ; but should the fever be Synocha and run high, the antiphlogistic plan must be preferred : yet in both *moderation* and a *quick discernment* are required.

Genus XXII. *Variola*.

Small-pox.

THE symptoms are, Synocha ; eruption of red pimples on the third day, which on the eighth contain pus, and drying fall off in crusts.

SECTION I.

OF THE DIFFERENT SPECIES OF VARIOLA.

THE small-pox has been considered as either *distinct* or *confluent*.

In the distinct small-pox the fever is manifestly *Synocha*, usually moderate, attended by sweating in adults, by spasms, convulsions, or epileptic fits, in children.

On the third day commonly, sometimes on the fourth or fifth, the eruption makes its appearance in red spots on the face; and during the two succeeding days, whilst these from pimples become pustules, the body and the legs receive their portion.

From this time the fever ceases; the pustules fill, each surrounded with a margin of a florid hue; the face begins to swell; and on, or before, the eighth day, from the eruption, the pustules come to their maturity.

At this period the swelling of the face subsides; both the hands and feet begin to swell; and the secondary fever, equally benign, under proper management, with the eruptive, comes on, but soon declines again.

In the confluent small-pox the fever is evidently *typhoide*. All its *preceding* symptoms are violent,

and are attended, sometimes by delirium in adults, or commonly by strong epileptic fits in children.

The eruption always appears on the second or third day from the attack; and the fever never ceases, although it suffers some remission, for two or three days after the eruption has appeared.

The eruptions, frequently preceded by an erysipelatous efflorescence, are numerous, small, never pointed, but flat and filled, not with good matter, but with either water, degenerated pus, or blood and ichor.

A salivation follows, and the throat is sore.

Instead of the red circle round the pustules, which makes active inflammation, we observe the skin, where it can be seen, pale and flaccid, and when the pustules burst, the exuding matter forms black crusts.

The fluids often shew putrescency; *petechiæ*, that is black or livid spots, are seen among the pustules; erysipelatous vesicles appear, under which the skin is disposed to gangrene; and sometimes bloody urine is discharged.

It is on the eleventh day that the patients generally die; yet some survive till the fourteenth, and others to the seventeenth, day of the disease.

It is the secondary fever usually that proves fatal in the small-pox. For supposing the fever not to have been originally typhoide, but Synocha with strong vascular excitement, the pustules will be numerous, and the active inflammation will be considerable,

derable. This naturally tends to exhaust the vital energy and to induce debility. But when the suppurated crust is extensive on the surface of the body, independent of absorption which produces hectic, the irritation there, which always bears proportion to the surface, will not only, by consent of parts, increase the irritability of the heart, and keep up the secondary fever, but, by exhausting the powers of life, convert a Synocha to Typhus.

SECTION II.

THE HISTORY OF INOCULATION.

THE small-pox, so destructive to preceding generations, is now, under proper management, no more to be dreaded than fire on the hearth.

For this change we are indebted to inoculation, introduced at the commencement of the present century by Pylarini, an eminent practitioner of Italy, who being then resident at Constantinople, sent to our Royal Society the first account both of the operation and its effects on the inhabitants of that metropolis.

By his relation it appears, that to them originally the practice had been derived from Greece, where it was found not in the hands of physicians, but of the peasants.

And

And by a subsequent account, transmitted to the same society by Timoni, A. D. 1713, it is evident, that the Circassians and Georgians had been long in the habit of performing this kind office for their female children, in order to preserve their beauty. Their principal intention was, however, to increase their value, when, at the age of maturity, they were to be sold to the Turkish officers.

A. D. 1717, the son of Wortley Montague, then at Constantinople, was inoculated, and Lady Mary, on her return to England, introduced the practice in our island, where it was first tried on the male-factors then in Newgate under sentence of death.

In consequence of the propitious issue of that essay, it was adopted by the royal family.

Dr. Jurin, Physician to the Court, having observed, so early as the year 1722, that, instead of one in five, the usual proportion lost by the natural small-pox, not more than one in ninety failed under inoculation; he communicated the information to the public, gave a description of his practice, and firmly established it in Britain.

For the modern improvement in the treatment of this disease, we are indebted to Mr. Sutton, who taught us the benefit of the antiphlogistic regimen.

This information, I imagine, was derived about A. D. 1760 from America, where they constantly, before the insertion of the matter, cleansed the alimentary canal by antimonials and mercurials.

The

The American practitioners restricted their patients chiefly to a vegetable diet, and instead of confining them to bed, permitted them to walk in the open air, and by no means suffered them to approach a fire.

SECTION III.

OF THE BENEFITS DERIVED FROM THE ASTHENIC TREATMENT.

THE scope of all their preparations was to moderate the eruptive fever, because they always observed a proportion between it and the eruption; and saw clearly, that the secondary fever, from which they had most to apprehend, was governed by the number of the pustules.

The idea formerly and universally received was, that a certain quantity of variolous matter existed in the blood to be concocted and expelled by the eruptive fever.

This opinion is now universally exploded, excepting some villages, more especially in Cornwall, where they continue to give brandy, or, in the place of brandy, with astonishing simplicity, they substitute gin and gunpowder.

They conceive, that a ponderous load is to be heaved, and, considering that in their mines they have no agent so powerful as gunpowder, they ad-

minister it to patients on the first appearance of the small-pox, and exult when the skin is covered with a multitude of pustules.

That the benefits derived from inoculation depend upon keeping down the eruptive fever, and thereby diminishing the burden on the surface of the body, is strikingly evinced by one instance, among a thousand that might be mentioned. It is recorded by Dr. Mudge.

Mr. SUTTON, in the vicinity of Plymouth, inoculated a lady, who on the third day after the commencement of the Synocha, had five or six red pimples, which formed gradually into pustules.

During the progress of the disease, as she sat at table, she expressed uneasiness, and wished to have stronger evidence, than yet appeared, that she had the small-pox. Mr. Sutton told her, that she had only to eat a portion of hare, which was on the table, and drink one glass of wine, and she would have sufficient evidence to satisfy her mind.

She accepted the proposal; the fever increased; and the small-pox, from being *discrete*, became *confluent*.

Sutton then took fright, and delivered her to the care of Drs. Mudge and Huxham, by whose watchful attention she was carried safely through the secondary fever.

SECTION IV.

THE CONDUCT OF INOCULATION.

THE practice of Sutton, as improved by BARON DIMSDALE, is highly interesting; because, if it does not reveal the arcanæ of *fever*, nor trace them to their most recondite recesses, at least it diffuses much light upon the subject.

The Baron, by way of preparation, recommends from five to eight grains of calomel, combined with as much compound powder of crab's claws, to which he adds tartarized antimony gr. $\frac{1}{8}$, to be taken at going to rest, and to be purged off in the morning with Glauber's salts.

This cathartic process he generally repeats three times, at the distance of three or four days, prior to inoculation; and as soon as the inflammation of the wound appears, he gives about half the former dose of calomel and crab's claws, with one tenth of a grain of tartarized antimony.

He commonly forbids the use of wine, and restrains the robust to a vegetable diet.

He recommends cool air, and is careful to keep the passage of the bowels free.

By these means he bridles the fever and governs it at pleasure, insomuch that his patients never lose either their appetite or sleep.

It must not be imagined, that mercurials act as an *antidote* to the variolous poison, any further than as, by removing viscid mucus, bile, worms, and acrid fordes, from the intestines, it becomes a febrifuge.

Is it not from hence, and from all our observations on the process of inoculation, palpably evident, *that the fomes of fever is in the alimentary canal?*

If, in the progress of the inoculated small-pox, there should appear symptoms of great debility, recourse is had to wine, to animal food in moderate quantity, or even to more active stimuli.

SECTION V.

OF THE TREATMENT IN THE NATURAL SMALL-POX.

FROM observations, which I have had an opportunity of making in different parts of Europe, for more than thirty years, I am convinced, that the treatment above described is equally applicable to the inoculated as to the natural small-pox; and I have the satisfaction to find, that practitioners of distinguished abilities are of the same opinion.

The first attention, therefore, in the natural small-pox, must be to regulate the eruptive fever; and, supposing

supposing this to be a Synocha, with symptoms of strong vascular excitement, it must be moderated.

This may be accomplished,

1. *By removing acrid stimuli from the intestines*; because, as I have stated, these, by consent of parts, increase the irritability of the heart.

For this purpose we use emetics and cathartics.

Of *emetics* I can say with Sydenham, “Sæpe miratus sum, dum fortè materiam vomitu rejectam aliquando curiosè contemplabar, eamque neque mole valde spectabilem, nec pravis qualitatibus insignem; quî factum fuerit ut ægri tantum levaminis exinde senserint; nempe vomitu peracto, sæva illa symptomata, nausea, anxietas, jactationes, suspiria luctuosa, linguæ nigredo, &c. que et ipsos excruciant & adstantes perterrefecerant, mitigari solent ac solvi, quodque morbi reliquum est εὐδύμως tolerari.”

Cathartics have a two-fold operation, for they not only cleanse the bowels, but, as evacuants, they diminish the activity of the sanguiferous system, and obviate its inflammatory state.

2. *By the antiphlogistic regimen.*

For this purpose the patient must be exposed to the action of a cool and refreshing air; he must avoid animal food with fermented liquors; he must have acids; he must bathe his legs in tepid water, and if, notwithstanding these precautions, the eruptive

tive fever should run high, with a full, strong, hard, and frequent pulse, blood must be taken from a vein; after which either the antimonial powder or tartarized antimony must be given in nauseating doses, which will both cleanse the first passages and keep up a perspiration on the skin.

But supposing, that instead of Synocha, with symptoms of strong vascular excitement, the eruptive fever should incline to Typhus, with a frequent and contracted pulse, prostration of strength, delirium, or other symptoms of disorder in the nervous system, in this case the indication will be, to support the powers of life.

This purpose, as already stated in Typhus and passive inflammation, may be answered by cordial stimulants, with tonics and astringents, such as, aromatics, bitters, wine, brandy, opium, and the Peruvian bark, with this precaution, that the stomach must first be cleared by an emetic.

In addition to these general remarks, it is proper to remind the student, that he must obviate any tendency to putrefaction, not merely by the means already specified, but by acids, and more especially by emptying, as far as the strength of the patient will admit and occasion may require, either by cathartics, or by laxative clysters, that grand storehouse of putrefactive matter, the alimentary canal.

Dr. THORNTON, having taken up this idea, has directed with great success the *aerial acid water*, *gooseberry food*, and *butter-milk*; he intends when a
favourable.

favourable opportunity occurs to make trial of *yest*, with which he has in putrid fever already done such wonders.

When the eruption has appeared, a watchful attention is required, as well to its progress, as to the state of the pulse and to the strength and spirits of the patient.

Should the pustules flatten, and the powers of nature be insufficient to bring forward the eruption; should fainting, coldness, tremor, with other nervous symptoms, supervene; these, with the pulse and spirits of the patient, will plead for cordial stimulants, such as aromatics, wine, bitters, volatile alkali, opium, the Peruvian bark, and blisters.

In such circumstances Dr. Whytt, after bathing the legs in warm water, was accustomed to prescribe the following :

℞ Aq. Cinnamom. un. 8.

Cinchon. un. 1.

Syr. Limon. dr. 3.

M. c. un. $1\frac{1}{2}$ o. 4. h. vel p. r. n.

That is,

Take cinnamon water eight ounces, bark one ounce, and syrup of lemon three drams.

The dose may be an ounce and an half every four hours, or more frequently if needful.

To this, in case of *Petechiæ*, he added elixir of vitriol from ten to twenty drops for every dose.

When viscid mucus accumulates in the throat, detergent gargles must be resorted to, and vinegar of

squills, in the dose two drams united with twice the quantity of cinnamon water, may be given two or three times a day.

A suppression of urine is sometimes removed by exposing the patient to cold air; and in case of bloody urine, tincture of roses and spirit of vitriol must be mixed with every thing he drinks.

Should *delirium* occur, the student must consult what has been delivered on that subject under Synocha and Typhus.

In case of restlessness and want of sleep, if there should be symptoms of debility, give opiates; but should the symptoms be those of vascular excitement, you must have recourse to evacuants, cool air, and acidulated drinks.

In the decline of the eruption, when the secondary fever follows, the attention of the practitioner must be perfectly awake.

Should this fever discover symptoms of vascular excitement, he must conduct himself as in the similar eruptive fever, with this caution, that he must not be too hasty with his lancet, lest he should be overtaken by a Typhus. Cool air, acids, and cathartics of the refrigerant order, will in most cases supersede the necessity of bleeding.

Should the secondary fever be a Typhus, the directions already given on that subject will be sufficient.

To them, therefore, I must refer the student, however, with this short memento, that, after he
has

has given an emetic, his chief dependance must be on wine and the Peruvian bark.

Let the student be more especially attentive to support the powers of life on the eleventh, fourteenth, and seventeenth days of the disease.

With respect to nutriment, the best and most agreeable, from the time of the eruption till the pustules mature, is milk-porridge. It is thus made:

Take oatmeal two ounces, soft water three quarts: boil this, frequently stirring it, till it is reduced to two quarts; strain it, and let it cool; then pour off the clear liquor, and add one quart of milk, with a small quantity of sugar or of salt, which ever is most agreeable.

Genus XXIII. *Varicella*.

The *Chicken-pox*.

The symptoms are, moderate Synocha; pimples bearing some resemblance to Variola, quickly forming pustules about the size of millet-feed, which contain a fluid matter, and after three or four days, from their first appearance, desquamate, leaving no cicatrix.

This disease may be safely left to nature.

Genus XXIV. *Rubeola.*The *Measles*.

THE symptoms are, Synocha; hoarseness; dry cough; sneezing; drowsiness; about the fourth day eruptions of small red points, discernible by the touch, which, after three days, end nearly in desquamation. The blood, after venesection, exhibits inflammatory crust.

In addition to the symptoms already related, we may remark, that the eyes and eyelids always shew the presence of this disease, being somewhat inflamed and suffused with tears.

The Synocha usually continues during the whole progress of the disease.

SECTION I.

METHOD OF CURE IN THE MEASLES.

FOR the treatment, it might be here sufficient to refer the student to what has been delivered generally in the Introduction to this order on eruptive fevers; but in addition to this, a few hints may be usefully given.

Dr. CULLEN,

Dr. CULLEN, apprehending inflammation of the lungs, strongly urges us to have recourse to copious bleeding; but from all the observations I have had an opportunity of making I am inclined to think, that such a practice can be seldom beneficial, and not only may be, but is frequently injurious. I had occasion to remark, when I was lately at Southampton, that the *buff coat*, or *inflammatory crust*, appeared upon the blood, even after the tenth or twelfth bleeding, when the patients sunk and died under the lancet.

The student, therefore, must be careful not to place too much dependance on this fallacious test of inflammation, which not only depends upon various circumstances at the time and in the act of venesection, but is equally observed in dropsy, the putrid sore throat, and the last stage of a consumption.

It should be remembered, that active inflammation can subsist only with the sthenic diathesis, whereas at the end of measles, when the inflammatory affection of the lungs is most apprehended, it is not the sthenic, but the asthenic diathesis which prevails, with symptoms not of strength but of debility.

In the measles it is undoubtedly proper to abstain from animal food and from fermented liquors, and to breathe cool air. Yet we should confine the patient to his bed, and keep his body open with cathartics of the refrigerant order.

SECTION II.

TREATMENT OF COUGH AFTER MEASLES.

IN the subsequent cough let the student consult what I have said on *Tussis stomachalis*, and satisfy his mind, whether this symptom arises by consent of parts from an affection of the stomach, or whether it is induced by active inflammation.

If the pulse is strong, full, hard, and frequent, you must bleed, and continue to observe the antiphlogistic regimen; but if the pulse is small or feeble, although quick, you must avoid that operation.

If you observe dyspeptic symptoms or aspect that the cough is sympathetic, give an emetic and follow this by tonics.

In such circumstances balsam of copaiva has an excellent effect. Ten drops may be given, morning and evening, on a lump of sugar.

This, with the other balsams, similar to it in virtue, digested in spirits of lavender, is *Fuller's Balsamic Tincture*, which was formerly in great request for cough and consumption; and this balsamic tincture, with an extract of opium, is the famous *Balsam of Honey* recommended by the late Dr. Hill in these complaints.

Genus XXV. *Miliaria*.The *Miliary* Fever.

THE symptoms are, cold stage considerable ; hot stage attended with anxiety, and frequent sighing ; sweat of a strong peculiar smell ; eruption, preceded by a sense of pricking, first on the neck and breast, of small red pimples, which in two days become white pustules, desquamate, and are succeeded by fresh eruptions in the course of the same fever.

INTRODUCTION.

THIS disease does not correspond with the description of the order, for it does not appear to be contagious.

Yet we can no where place it better than with fevers followed by eruption.

Among the symptoms, enumerated by Dr. CULLEN, is Synochus ; but I can acknowledge no such distinction, because I am persuaded, that for every Synocha, by bad management, that is by suffering

the fever to run high and to exhaust the vital energy, by a free use of the lancet, by violent evacuations, or by neglecting properly to cleanse the first passages, may end in Typhus.

SECTION I.

HISTORY OF CASES.

It never has occurred to me, to see the miliary fever as an original disease. I have observed it often in the case of lying-in women, and in patients who have been confined to warm rooms, taking at the same time the most cordial stimulants.

I REMEMBER my own brother, some thirty years ago, conceiting that he was ill, sent for Dr. A———, who, after a variety of questions, asked him, if he had never had any eruption on his skin.

When the good old man had received an answer in the negative, he urged his patient to recollect again. On recollection my brother told him, that many years before he had an eruption, accompanied by a sweat of a strong and peculiar smell. The Doctor immediately replied, “Aye, there we have it; that was a miliary eruption, and you never will enjoy your health till that eruption is restored.”

He confined my brother to his bed; drew the curtains, shut the door, ordered a fire to be made, and gave him cordial stimulants.

In

In a few days a fever formed, and small red pimples were seen upon the breast, which soon became white pustules, desquamated, and were succeeded by fresh pimples.

In this case the Doctor succeeded to his wishes ; in another instance he was not so successful.

A LADY of a delicate habit had been declared by one physician to be bilious, by another to be nervous ; but receiving no benefit from either, she sent for Dr. A———, who sagaciously informed her, that they were both mistaken, and that her disorder was the suppression of a miliary eruption. With this idea he confined her to bed, as he had done my brother, and treated her precisely in the same manner, but without success, for no red pimples could be seen.

Disappointed in his expectations, and alarmed at the fever which he had raised, he sent her into the country, and ordered that she should drink ass's milk ; but in six weeks she was summoned back to town, where she underwent the discipline a second time. Yet, after peeping day after day without being able to discover a single pimple, till the patience of the husband was exhausted, the physician was dismissed, and Dr. Heberden was sent for.

When he arrived, he drew back the curtains, ordered the fire to be extinguished, threw up the shades, railed against the use of medicine, and told her she wanted nothing but a cook. This sudden transition gave her cold, with fever ; she sent for Dr. James, who laughed at all her medical advisers.

She took his powder ; received much relief ; and from that time, abjuring both physic and physicians, she has enjoyed, without the aid of medicine, that degree of health of which her delicate constitution was susceptible.

SECTION II.

OF THE PATHOLOGY OF MILIARY ERUPTION.

I AM perfectly of opinion with De Haen, that miliary eruption is a factitious symptom, induced by hot regimen, and therefore to be disregarded by the practitioner, any further than to avoid such regimen, whilst his whole attention must be turned towards the attendant fever, whether Synocha or Typhus.

Genus XXVI. *Scarlatina*.*Scarlet Fever.*

THE symptoms are, contagious Synocha; fourth day the face swells, and a scarlet eruption appears on the skin in patches, which, after three or four days, ends in a meally desquamation of the cuticle, or is succeeded by anasarcaous swellings, which soon subside.

It has no catarrhal symptoms, nor is there any anxiety or vomiting.

Two species are distinguished :

1. *Simplex*, without fore throat.

2. *Anginosa*, attended by fore throat ; and this evidently is the *Cynanche Maligna* already mentioned, usually malignant but sometimes mild, with ulcers which form good pus and quickly heal.

In the memoirs of the London Medical Society we find a very interesting account of this disease by Dr. Sims, when it appeared as an epidemic in 1786.

The symptoms were, 1. paleness and dejection ; 2. nausea and bilious vomiting ; 3. the succeeding morning redness of the face, with eyes inflamed but not watery ; pulse full and quick ; throat sore.

The third day the redness was at its height, and the fauces were covered with a thick tenacious slough, arising from a prodigious secretion of tough mucus.

The fourth day small ulcers were discovered on the tonsils and velum pendulum palati.

About the fifth day the swelling was the greatest. The mouth was then filled with phlegm of extreme tenacity, and a thinner defluxion came from the nostrils.

The fever at this time was moderate, as were the heat, the thirst, the appetite.

The patients coveted wine and porter, their belly was regular, and they slept well.

About

About the sixth day many had laxative motions, and passed by stool a mucus similar to that which had been rejected from the mouth. All the symptoms mended gradually, and vanished on the ninth day, by which time the desire for wine had ceased.

In others on the fourth or fifth day a great deficiency began, nearly rising to delirium, appearing with vacant stare and incoherent speech; the pulse, at the same time, was quick, unequal, weak, so as not to be counted, and scarcely to be felt, whilst the skin was florid, but without perspiration, and like a corpse.

The patient continued insensible to the discharge of urine and by stool.

In these circumstances, on the succeeding day, he sunk into the arms of death.

Some had the angina without the scarlatina, others had the scarlatina without the usually attendant symptoms of angina.

And others again had first the scarlatina, and, in a few days after it was gone, were attacked by angina with its attendant fever.

Old people, with many who had been weakened by anxiety, sunk under the fever, without visible angina or scarlatina, and died, with Petechiæ and deficiency, without a struggle.

In these the strongest cordials produced no effect, and blisters did not rise.

Dr. Sims, in the first state of the disease, gave the following:

R̄ Tinct. Rosar. un. 2. Syr. Limon. dr. 1.
Sp. Vitriol. gtt. 20. f. Haust. o. h. s.

That is,

Take tincture of roses two ounces; syrup of lemons one dram; spirit of vitriol twenty drops. Made into a draft, and taken every hour.

In this state he likewise gave a sufficient quantity of rhubarb and sal polychrest, in equal parts, to procure two motions every day, and in case of nausea he ordered wine of ipecacuanha.

As the disease proceeded, he substituted decoction of the Peruvian bark for the tincture of roses; and, if the pulse were weak, he added aromatic conffection, with stomachic tincture, and spirit of vitriol; not, however, omitting the rhubarb and sal polychrest.

He gave meat every day, and wine in moderation, but not enough to weaken by intoxication.

This practice he continued till the turn of the disease, when he diminished the cordial tonics, that he might avoid new fever.

From what has been delivered the student may collect, that, in the management of scarlet fever, he must be guided chiefly by the pulse, and adopt indications from Synocha or Typhus, according to the symptoms of debility or strength.

Genus XXVII. *Pemphigus*.

A FEVER attended by successive eruptions of vesicles about the size of almonds, which are filled with a yellowish serum, and in three or four days subside.

The fever may be either Synocha or Typhus.

When Dr. Cullen published his Nosology, he was inclined to omit *Pemphigus*, because he had never met with it, and considered every account delivered respecting it as obscure.

But in the present day we can no longer doubt of its existence, as well characterized and easily to be distinguished from every other species of eruptive fever.

Dr. DICKSON, of Dublin, is of opinion that *Pemphigus* is not contagious; but Burserius, whilst he allows the validity of this remark respecting the mild species, asserts, that the malignant species is contagious, and he considers that even in the mild species a tendency to putrefaction is constant and considerable.

This agrees with Dr. Cullen's definition of the genus Typhus Contagiosa.

In

In the treatment of this disease no particular attention is required to the eruption; because the indications of cure are to be derived wholly from the fever, whether Synocha or Typhus. To these, therefore, I refer the student.

Genus XXVIII. *Frambæsia*.

The Yaws.

FUNGI resembling raspberries, or sometimes large and scabrous like the mulberry, growing out of various parts of the body, chiefly near the groins. It is infectious, and may be propagated by inoculation. It begins with Pyrexia and the appearance of specks, which become small pimples, and gradually increase till the decline of the disease.

The same person never has it a second time.

This, with Dr. Cullen, I had placed in the class *Cachexiæ*; but, convinced by the arguments of Dr. Ludlow, of Jamaica, I have placed it among those cases with which it has a more natural connexion.

Dr. LUDLOW recommended a generous diet with diaphoretics for three weeks, or till the yaws no longer increase either in number or in size. He then salivates his patients for about ten days, till the skin is clear, and concludes his operation by æthiops with gum guaiacum.

Order IV. HÆMORRHAGIÆ.

HÆMORRHAGES.

THE character is, Pyrexia, attended by a discharge of blood without any external injury ; the blood on venesection exhibiting the buff coat.

INTRODUCTION.

THE parts most subject to hæmorrhage are, such as most abound with blood-vessels winding and creeping near the surface, and covered only by a feeble membrane. Such are the nostrils, the bronchiæ, the gums, the ileum, the rectum, and the uterus.

The persons most liable to this complaint are those who, with a soft skin, have the sanguine temperament, and it has been universally observed, that hæmorrhage from the nose attacks young people chiefly ; from the lungs, those who have arrived at manhood ;

I from

from the rectum, principally those who are advanced in years; whilst bloody urine marks decrepit age.

Spring and autumn are the seasons when we have most to apprehend from the hæmorrhagic effort.

SECTION I.

HÆMORRHAGE DISTINGUISHED INTO ACTIVE AND PASSIVE.

HÆMORRHAGE may arise, either from increased momentum of the fluids, or from diminished resistance of the solids; that is, either from augmented energy of action in the larger propelling vessels, or from loss of tone in the ultimate branches of the arteries.

Hence are derived two species of hæmorrhage, active and passive, to be particularly considered.

SECTION II.

OF ACTIVE HÆMORRHAGE.

IN active hæmorrhage we commonly observe, prior to the effusion of blood, a sense of coldness followed by some degree of heat, thirst, and restlessness, with the pulse, frequent, strong, and sometimes hard.

The proximate cause appears to be, energy of action in the larger propelling vessels, with a determination to some particular part of the system, producing distension of the vessels, and from this stimulus, stronger efforts of the vital principle to procure relief, till, from diminished tone, anastomosis, or a rupture of the vessels, a passage is made for the accumulated blood.

The occasional cause may be, violence of fever, strong vascular exertion, spices, spirits, and the stimulus of heat.

The indication of cure in active hæmorrhage is, to diminish energy in the larger propelling vessels.

For this purpose their tension must be reduced by bleeding, by nauseating doses of emetics, by the antiphlogistic regimen, by acids, and by rest.

This

This regimen, however, must not be urged too far; because hæmorrhage, which at first is active, may terminate as passive with symptoms of debility: and it must always be remembered, that the energy and living power of an organ bears proportion to the quantity of blood which circulates through it.

Cold water, and probably the inhalation of azotic air, and air surrounded by a frigorific mixture, are useful, but the most speedy relief from hæmorrhage is obtained by fainting.

To prevent a return, recourse must be had to abstinence and exercise.

SECTION III.

OF PASSIVE HÆMORRHAGE.

In passive hæmorrhage the pulse is soft and feeble, and the symptoms of Pyrexia are wanting.

This is the most common species in young subjects and in females.

It may be induced,

1. By all the causes which diminish the action of the solids.

2. By whatever either dissolves the crasis of the blood, or corrodes the solids, whether the acrimo-

nious solvent be purulent, ichorous, gangrenous, cancerous, or scorbutic.

The indication of cure is, to brace, strengthen, and restore tone to the whole system, and particularly to the extreme arteries.

With this intention, tonics and astringents, with refrigerants externally applied, must be freely used.

I have found a strong infusion of oak bark with quassia and cassia lignea highly efficacious.

I order one ounce of the bark, one dram of the quassia, and half a dram of the cassia, to be infused in eight ounces of boiling water for twelve hours.

The dose of the infusion is three ounces every six hours. To this dose five or six grains of alum may be occasionally added.

Some of the formulæ in my Compendium, under the class of astringents, may be useful, but more especially 74 and 75, if powerful astringents are required.

With these medicines wine and a generous diet perfectly agree.

When hæmorrhage is a symptom of any particular disease, as for instance of scurvy, putrid fever, phthisis, dysentery, the indications must be taken from the primary disease.

SECTION IV.

A CAUTION TO AVOID MISTAKES.

It is of importance for practitioners to avoid mistakes between active and passive hæmorrhage, because, by treating the active affection as the passive should be treated, a critical evacuation may be checked, nature may be defeated in her efforts to relieve herself, dangerous diseases may be induced, and the patient may be destroyed by his physician.

On the other hand, by prescribing for passive hæmorrhage the medicines which would be proper in the active, the strength of the patient will be speedily exhausted, the disease will be increased, every distressing symptom will be aggravated, and the patient will be lost.

To obtain clear and distinct ideas on this subject, the younger student must carefully consider what has been delivered on active and passive inflammation, and also the indications of cure in Synocha and Typhus.

SECTION V.

OF THE GENERA.

OF this order we have five genera :

Epistaxis, Hæmoptysis, Phthisis, Hæmorrhoids, and Menorrhagia.

Genus XXIX. *Epistaxis*.

THE symptoms are, *bleeding at the nose*, with pain or fulness of the head, frequently preceded by giddiness, sudden dimness of vision, drowsiness, and itching of the nose.

It is the disorder chiefly of young people, who have a lax habit and debilitated fibre ; of females, who have obstructed catamenia ; and of men, in whom the piles have ceased to bleed.

SECTION I.

GENERAL REMARKS.

WHEN this disease appears with the sthenic diathesis, the pulse, by its strength and fulness, prior to the loss of blood, will prove that it is an active hæmorrhage.

But when it is the disease of a lax habit and debilitated fibre, a soft and feeble pulse will manifest the hæmorrhage to be passive.

It has been remarked, that patients who in early youth have been subject to bleeding at the nose, as they have advanced to manhood have been liable to severe affections of the chest, such as, spitting of blood, pleurisy, and phthisis pulmonalis; and in riper age have been attached by piles, nephritic diseases, and the gout.

Innumerable instances are observed of *vertigo*, *head ach*, *phrenitis*, *convulsions*, and *epilepsy*, being removed by a spontaneous bleeding at the nose; and, on the other hand, these diseases, with *apoplexy*, and *gutta serena*, are induced by a premature suppression of this critical discharge.

A bleeding at the nose is salutary and critical in Synocha, when it happens either between the third and fourth, or on the seventh, day: but in Typhus, in hectic, and in dropsy, it is most often fatal.

SECTION II.

OBSERVATIONS ON PLETHORA.

UNDER the genus *Epistaxis* Dr. Cullen mentions two varieties, the *Epistaxis* of young people with signs of arterial plethora, and the *Epistaxis* of old people with signs of the venous plethora.

With regard to arterial plethora there can be no room to doubt, that the strength and vigour of the system is in proportion to the quantity of *well oxygenated blood* circulating through the arteries. This will be evident to every one who considers the nature of the animated fibre; for, as Dr. BEDDOES has judiciously observed, when the vessels are distended mechanically by the blood, with *well oxygenated blood*, this stimulates the fibres to contract with vital energy, the action and reaction are great, the contraction strong, all is activity and all is vigour.

This state of the vessels is properly their tone.

And I well remember an apothegm of Dr. Cullen's, or at least one that he used frequently to quote, *Pondus addit robur*; that is, weight, or, in other words, fulness, of the vessels.

Supposing due circulation increases strength, general plethora with increased proportion of circulating

lating blood, as it produces universal vigour, cannot be the cause, proximate, predisposing, or occasional, of passive hæmorrhage, which requires debility in the extreme vessels for its production.

SECTION III.

INDICATIONS OF CURE IN EPISTAXIS.

If these ideas are well founded, the indications of cure in the spontaneous epistaxis of lax habits will be, to remove and to avoid the occasional causes, and to strengthen the debilitated fibre.

These are the means of preventing the recurrence of epistaxis. But when the disease is present, it may be stopped, if needful, by the partial application of cold, by mechanical pressure, by styptics locally applied, such as, blue vitriol (*cuprum vitriolatum*) or alum, and by acids united with astringents.

HOFFMAN relates the case of a young gentleman of a sanguine temperament and florid complexion, who, from frequent and copious bleeding at the nose, lost his strength, his appetite, and in some degree his sight.

The professor being consulted ordered, that for his common beverage he should take cold water from the fountain, with tincture of roses, spirit of vitriol,

vitriol, and syrup of berberries, keeping at the same time his feet and body warm.

In fourteen days the bleeding ceased, and when he had been nourished for some weeks with strong broth and jelly, he perfectly regained his health and sight.

By these medicines the determination was changed from the internal to the external surface, and a free perspiration, which, when copious, in cases of hæmorrhage, is a good omen, was restored.

For more particular observations on the cause and cure of epistaxis, see the introduction to the order and what has been delivered generally respecting hæmorrhage.

Genus XXX. *Hæmoptysis*.

THE pathognomonic symptom is, coughing up florid, or frothy, blood.

It usually returns by paroxysms, preceded commonly by stricture on the surface of the body, lassitude, pain in the back, flatulence and costiveness, pain or heat with oppression on the chest, irritation in the larynx, and a saltish taste in the mouth.

The persons most subject to hæmoptysis are, such as are slender in their make, with long necks and contracted

contracted chest, of an irritable habit, subject in their early years to bleeding at the nose.

These are more especially liable to it when they cease to grow, or from the age of five and twenty to five and thirty.

SECTION I.

OF THE OCCASIONAL CAUSES OF HÆMOPTYSIS.

THE occasional causes may be, not only spices, spirits, and the stimulus of heat, but a too powerful exertion of the lungs, as in coughing, singing, and blowing wind instruments, or strong efforts in the expulsion of the fæces.

It is promoted by sudden changes in the temperature of the air, and by humidity; hence it is most common at the æquinoctial periods.

HOFFMAN supposes the determination to the lungs, with impeded return of blood by the pulmonary veins, producing aneurism and rupture in the arteries, to be the proximate cause of hæmoptysis, and these affections he conceives to be induced by spasmodic stricture on the internal and external surfaces of the body.

This may be easily conceived; but, when he introduces orgasm, ebullition, and turgescence of the blood, arising from increased intestine and expansive
five

five motion of its sulphureous aëro-ætherial parts, as diminishing and destroying the systaltic and elastic power of the vessels, and thereby inducing congestion, distension, rupture, I must profess, that I have no distinct idea of his meaning.

SECTION II.

OF THE SPECIES OF HÆMOPTYSIS.

DR. CULLEN enumerates five species of hæmoptysis :

Plethorica, Violenta, Phthisica, Calculosa, and Vicaria.

The *vicaria*, in my opinion, is clearly symptomatic, and, strictly speaking, therefore, should not be considered as a species.

It is a curious effort of nature to relieve herself in cases of obstructed catamenia, and is therefore properly named by Sauvage *Hæmoptysis Catamenialis*.

The indications of cure in this case will be properly considered when we come to amenorrhœa.

As to the *plethorica*, I must refer the student to what I have already said on plethora, in the preceding genus.

The

The *phthisica* has no title to be a specific term, as being either expressive of the effect, or a symptom of phthisis as the primary disease.

Hæmoptysis calculosa, by its appellation, marks the occasional cause to be calculi, chiefly calcareous, formed in the lungs themselves, and of this many instances occur.

Yet this cause of the disease lies frequently concealed, till, in bodies which can with propriety be submitted to dissection, they are discovered by the knife.

SECTION III.

OF HÆMOPTYSIS VIOLENTA.

DR. CULLEN has remarked, that this species happens to persons of a delicate make, who are distinguished for *sensibility* and *irritability*.

The predisposing cause, therefore, is debility ; and it must be remembered by the student, that the numerous blood-vessels of the lungs, spread out near to the internal surfaces of the bronchial cavities, are situated in a loose cellular texture and covered by a tender membrane, so as to be easily exposed, either to anastomosis or to rupture, where debility prevails.

The

The occasional cause may be heat, or violent exertion giving increased momentum to the blood in the vessels of the lungs, or it may be some mechanical injury offered to the lungs themselves.

From the proximate, the predisposing, and the occasional, causes, it will be clear, that the indications of cure should be,

1. To avoid heat and violent exertion.
2. To promote a determination to the surface of the body.
3. To strengthen the habit, by gentle exercise, by astringents, and by tonics.—And
4. By living in a moist air.

Dr. CULLEN, in cases of hæmoptysis, condemns chalybeates and the Peruvian bark; but I have seen and had sufficient evidence of the greatest advantages derived from both.

When my eldest daughter was five years old, she had an hæmoptysis, for which I sent her to Bath, where she drank the waters for six weeks, and returned to me in perfect health. And, when I myself was troubled with the same complaint, Dr. CHARLTON ordered for me a generous diet, with port wine and the Peruvian bark.

From

From experience I am convinced, that spontaneous hæmoptysis must be considered as a passive hæmorrhage; and from this conviction, to patients of a delicate and irritable habit, I have given a strong infusion of oak bark combined with alum, bitters, and vitriolic acid.

Cheerfulness and the confidence of hope, as powerful tonics, are excellent remedies in this disease.

When, says the learned Hoffman, we meet with young people of an irritable disposition and great sensibility with a full pulse, we must abstain from cordials, volatile salts, and acrid purgatives; and must give nitre, manna, tamarinds, and diluents, such as, goat's whey, gruel, and barley-water.

But when we observe visciditv, torpid bowels, a cold and humid temperament, with a relaxed habit, we must then give balsams, spirit of sal ammoniac, and carminatives with martial tinctures.

He particularly recommends, in all cases, gentle astringents to prevent relapse.

With regard to periodical hæmoptysis he says, "*Periodos servantes morbi fomitem, ut plurimum, habent sordium in prima corporis regione colluviem.*"

In such cases, therefore, he prescribed emetics and cathartics, and having in one instance, after the exhibition of these, perfected the cure by sal. vol. oleos. gtt. 20, given in black cherry water every four hours, he thus accounts for this effect: "*Quia impensiores spasmos, eruptionis auctores, excipere solet debilitas; et relaxatio, ad stagnationem novam adeoque*
inducendum

inducendum denuo spasnum postea ansam præbens, hæc utique non melius potest præscindi, quam roborando partes atoniâ affectas, quod per ejusmodi volatilia oleosa perficitur commodissimè. Vol. II. p. 207.

Here he assumes debility, as the predisposing cause, and to remove it he approves of tonics.

Should, however, hæmoptysis be attended by a phlogistic diathesis, with symptoms of strong vascular excitement, the pulse being full, frequent, hard, and the heat much increased; in these circumstances bleeding may be proper, with cooling laxatives, acidulated drinks, absolute rest, and a vegetable diet.

In such circumstances tonics and astringents can have no place; they must be deferred till the diathesis shall be changed.

Yet these are circumstances which do not frequently occur. For this reason, the treatment of hæmoptysis recommended by the late Dr. MARRIOTT, who was distinguished as a successful practitioner at Bristol, is worthy of attention.

He says never bleed, but give for a dry vomit two grains of tartarized antimony, and, when nausea begins, expedite the operation by a solution of vitriolated copper, two grains in water. After the operation he always ordered half a glass of brandy.

In chronic cases he gave balsam of copaiva, twenty drops morning and evening, with the following electuary to be continued many weeks.

℞ Cinchon. dr. 6. Flor. Sulph. dr. 3. Nitr. dr 1.
 Sulph. Antimon. precip. scr. 1. Mucil. Gum.
 Arab. q. s. f. Elec. c. c. M. N. M. ter in die.

That is,

Take Peruvian bark six drams, flowers of sulphur three drams, nitre one dram, precipitated sulphur of antimony one scruple, mucilage of gum Arabic a sufficient quantity.

Take of this electuary the size of a nutmeg three times a day.

In cases of necessity he gave a scruple of alum, to be repeated as occasion might require.

Dr. RUSH, of Philadelphia, recommends dry sea salt to be taken in great quantities, but on what principle I am at a loss to say.

Genus XXXI. *Phthisis*.

Consumption.

THE symptoms are, emaciation, debility, cough, hectic, purulent expectoration, hæmoptysis, diarrhœa.

INTRODUCTION.

To distinguish this disease from others, to which it bears a striking resemblance, requires much accuracy of discernment and the most minute attention, because all the symptoms are equivocal.

Emaciation is common to tabes, to athropy, to fevers of every species, and to a variety of chronical complaints.

Of *debility* we may say the same.

Cough is a very common symptom, neither confined to this disease nor to catarrh, but to be observed in many others, arising from consent between various parts of the system and the lungs.

Such is the sympathy between the organs of respiration and the alimentary canal in its whole extent, that we have frequently a cough produced by the stimulus of acrid matters, whether acidities, bile, worms, or viscid mucus, collected either in the stomach or small intestines, and sometimes by ascarides, or even the usual irritation of fæces in the rectum.

Hætic is regarded by Dr. Cullen as an evidence of ulceration in the lungs; but it will not be difficult to prove, that hætic is often present where there is no ulceration, and therefore no pus to be absorbed.

In confirmation of this we have a curious case of *nostalgia* related by Dr. Hamilton, of Ipswich, to be hereafter particularly mentioned in its place.

And in cases of hectic following nervous atrophy, as stated by Dr. Whytt in his observations on nervous diseases, there is no absorption of pus.

Sir Clifton Wintringham judiciously refers *hectic fever*, in the first place, to circumstances obstructing the passage of blood through the lungs; secondly, to acrimony; thirdly, to inanition.

‘Dr. Home in his *Principia Medicinæ* inquires, “Is there any hectic as a primary disease?” and he replies, “I have seen many, where no viscus was more diseased than another: *Multas mihi certe contigit vidisse, ubi nullum viscus præ aliis, per totum morbi decursum laborabat. Neque fidem huic opinioni derogant viscerum obstructions, quæ semper in cadaveribus inveniuntur. Effectus enim æquæ ac causæ sunt febrium hecticarum.*”

Even in cases, in which there is pus to be absorbed, Dr. DARWIN, in a letter to Dr. BEDDOES, says, that large abscesses, as long as they are excluded from any access of air, occasion no *hectic fever*; but, on their surfaces being exposed to the contact of the external air, by bursting, hectic fever is occasioned in a very few hours.

And Mr. Bell, an eminent surgeon of Edinburgh, indebted for his information to Dr. Monro, has delivered his sentiments in similar expressions,

as appears in the fifth Volume of the Medical Commentaries.

To this eminent professor we have been equally indebted for teaching surgeons to exclude the air from recent wounds.

The appearance of *purulent expectoration* is likewise equivocal; because, even assisted by the observations of Dr. Cullen and the experiments of Mr. Charles Darwin, it is sometimes difficult, if not impossible, precisely to distinguish the nature of the expectoration. And Dr. Cullen himself, after all his observations and reasonings on the subject, terminates at last by taking for granted, what he should have proved, that hectic fever always arises from absorbed pus; and then hastily concludes, that the presence of hectic is sufficient to demonstrate the attendant expectoration to be purulent.

Were this indeed sufficient, he might have spared himself the trouble of referring to the experiments of Mr. Darwin.

But even supposing the expectoration to be such, as in catarrh is frequently, towards the close, discharged by the mucous glands of the nostrils; yet this will by no means prove that the lungs are ulcerated.

Hæmoptysis has already been considered as a genus, and cannot, therefore, be a sufficient evidence of phthisis.

Diarrhœa is the last and concluding symptom.

When

When this appears it will be too late to settle our diagnosis.

Since then all the symptoms, separately considered, are equivocal, and even when united have deceived the most eminent professors, we must be careful in the extreme not to make mistakes.

SECTION I.

PHTHISIS MAY BE SYMPTOMATIC.

INDEPENDENT of the preceding observations, I am inclined to think, that phthisis itself is sometimes symptomatic, and therefore to be cured by attention to the primary disease: for instance, protracted *catarrh*, the *hectica verminosa*, *tussis stomachalis*, *asthma*, and *amenorrhœa*, have been known to terminate in phthisis, and being cured have left the patient free from all complaint.

It is well known, that violent, long continued, and frequently repeated, agitations of the lungs in coughing, whether that cough be idiopathic or sympathetic, will produce a strong determination to the chest, with diseased glands, hæmoptysis, and phthisis.

Hence it has frequently happened that *spasmodic asthma*, *tussis exanthematica*, *tussis verminosa*, and particularly *tussis stomachalis*, improperly treated, have

produced the very disease which the medical adviser was anxious to avoid.

I could give instances of eminent physicians, who, in these diseases, have lost their patients by a hasty and mistaken diagnosis; and of others, who, whilst they were curing *tussis stomachalis*, imagined they were treating a genuine *phthisis*, arising from tubercles and ulcers in the lungs.

Every practitioner must have observed phthisis arising from *amenorrhœa*, as the primary disease, and effectually relieved when the monthly evacuation has returned.

In addition to what I have already said on this subject, I must observe, that Dr. S. CHAPMAN, in his treatise on *remittent fever*, which assumes the form of *pulmonary hectic* or *consumption*, gives us many curious and most interesting cases, in which the symptoms of hectic and phthisis were removed by curing the remittent fever.

This he effected by the Peruvian bark.

Scabies, syphilis, and scrophula, neglected or ill treated, may likewise terminate in phthisis, which, unless it has gone too far, may be relieved by attention to the primary disease.

I must here also refer to the symptomatic phthisis which followed *atrophia lactantium*, when either the fond mother suckles her child too long, or when the nurse, struggling with poverty, has two children hanging at her breasts, although she has scarcely strength enough to suckle one.

With respect to the cases recorded by Dr. WALKER, of more than 200 patients at Leeds who came to him within two years, and in whom he attributes this disease to the use, or rather to the abuse, of tea; the cause assigned does not appear to me to have been adequate to the effect produced. For, since the unfortunate American war, and the heavy duties imposed upon the poor to defray the expences of that war, the lower classes in this district, the Vale of Pewsey, more especially the women, and consequently they who are giving suck, live chiefly upon tea, taking it four times a day; yet no such *atrophy* nor symptomatic *phthisis* has appeared.

As, therefore, in similar circumstances, I can say nothing from experience, I shall be silent on this subject, and refer the student to the cases as they are related by Dr. Duncan in his valuable commentaries, Decad 2. Vol. V.

SECTION II.

OF THE SPECIES OF PHTHISIS.

DR. CULLEN has distinguished two species of phthisis.

The first he calls *incipiens*, without expectoration of pus; the second *confirmata*, attended by expectoration of pus.

But, with humble submission to his superior judgment, I may venture to suggest, that these distinctions ought not to be received as characteristic of different *species*, because they are merely descriptive of the *stages* in the same disease.

Dr. FOART SIMMONS, with the utmost propriety, assigns for the cause of genuine phthisis either *tubercles* or a disposition to *hæmoptysis*, and these certainly lay a good foundation for two species, which may be denominated *phthisis tuberculosa* and *phthisis hæmoptoica*.

SECTION III.

OF TUBERCLES,

AND THE PREDISPOSITION TO HÆMOPTYSIS.

FOR the knowledge we have of *tubercles* we are indebted to the late Dr. Stark, whose accurate investigations have thrown full light upon this part of the pathology, and from his inestimable work I have derived my information.

Tubercles, whilst small, are always solid; when large, they are sometimes so. They approach to the hardness of cartilage, and when cut through appear smooth, shining, uniform.

No vessels are to be seen in them, even when, after injecting the pulmonary artery and vein, they are examined with a microscope.

They

They are always in the cellular substances, never in the air-vessels, in which the extremities of the bronchial ramifications terminate.

They are at first extremely small, numerous, in clusters; but never in the least inflamed.

When they become *vomicæ*, it is always in the superior and posterior part of the lungs, where they form strong adhesions to the pleura.

Vomicæ, whose cavity is less than half an inch, are quite shut up; but those, which are larger, have one or more ramifications of the bronchia opening into them, through which the matter sometimes makes its way into the trachea, and is then evacuated without rupture of the *vomicæ*.

The persons liable to *tubercles* are generally of a fair complexion, soft skin, and irritable habit, descended from scrophulous parents, and disposed to suffer by lymphatic tumours.

From Hippocrates downwards it has been constantly remarked, that those most subject to *hæmoptysis*, one of the prolific parents of *phthisis*, have a delicate complexion and sanguine temperament, with florid cheeks, a slender form, long neck, contracted chest, and prominent shoulders.

Professor Camper has observed likewise, that they have sound teeth, which, as the disease advances, usually become of a *milky white*, and more or less transparent.

SECTION IV.

OF THE TREATMENT IN PHTHISIS.

LET the student carefully examine the constitution of his patient and the nature of those diseases to which either he, or his parents, have been most subject, whether 1. to those which indicate a weakness and relaxation of the stomach and alimentary canal; 2. to those which arise from a disposition to hæmoptysis, and a determination to the lungs; 3. to those which originate, as scrophula, in debilitated fibres, and a peculiar affection of the glands.

Let him next proceed to investigate with minute attention the origin and progress of the disease in question.

If it began as a catarrh, although it be now to his apprehension a confirmed phthisis, let him treat it as a catarrh with a milk diet, cool air, exercise on horseback, and the mixture of sulphur, elecampane, and liquorice, mixed with honey, as he will find these ordered in No. 50 of my Compendium.

Of this treatment I can say what Hoffman has advanced of milk alone, "*Qua per plures phthysicos in cymba charontis quasi hærentes, sanatos pristinaeque redditos valetudini novi*;" for by it the most alarming symptoms have been speedily relieved, and the patient has been soon restored to perfect health.

If

If the disease began with symptoms of dyspepsia and nervous affection; if there is reason to suspect, that the cough may be induced and supported by irritation in the stomach or in the small intestines; if the complaint is connected with either *hectica verminosa* or *tussis stomacalis*, already treated of; in these cases, the principal indications must be taken from the primary disease.

If it is attendant on *amenorrhœa*, what shall be said on that affection of the uterus must be consulted: if on *sypilis* or *scrophula*, reference must be had to these diseases: if it is derived from *psora* or from cutaneous eruptions, which have been repelled; from ulcers dried up, or from sweating of the feet repressed; the student must recollect what has been delivered on *tussis exanthematica*, and must prescribe accordingly.

When the indications of cure cannot be derived from these sources, the student must be contented to be wholly directed by the experience of others, and must choose for himself among the various plans which have been submitted by practitioners to the consideration of the public.

The first plan to be considered is that, which has been most universally adopted, by bleeding and the antiphlogistic regimen; but this has been so universally *fatal*, that little expectation of relief can be derived from it.

If the disease has slain its thousands, physicians,
by

by this mode of treatment, have slain their ten thousands.

Dr. PERCIVAL has judiciously remarked, that the hectic heat is sometimes increased by bleeding, and the use of nitre, which may indeed sink the pulse from 110 to 90, but in one quarter of an hour raises it to 130, whilst at the same time the strength is much impaired; whereas in such cases tonics sink the pulse.

I have been witness to instances, where patients, sinking under the antiphlogistic regimen, have revived, and every distressing symptom has been mitigated, by a more generous diet.

The following case related by Dr. GREGORY, of Edinburgh, to his pupils will elucidate and confirm this observation.

The Doctor says,

“ SOME time ago I was called to a patient, who, to all appearance, laboured under a confirmed *phthisis*. I thought I could be certain of its being of the scrophulous kind, both from my own knowledge of the patient's constitution, and from the progress of the disease, for there had been no spitting of blood, and indeed scarce any spitting at all, at least not so much as we should have expected from the mucous follicles of the trachea itself, or the bronchiæ, in consequence of the severe irritation of the cough.

There was nothing, to all appearance, expectorated but a little mucus.

The symptoms were, a frequent dry cough, of the peculiar hollow sound that so strongly characterizes the
phthical

phthisical cough ; great pain in the breast, with much difficulty of breathing ; great hectic fever ; the pulse never under 100, and during the exacerbations sometimes above 130 ; the flesh much wasted ; the features sharp ; the cheeks hollow, and often flushed with a circumscribed spot of red ; the strength so much exhausted, that my patient could not sit upright for a quarter of an hour, nor walk across a room without support.

The sleep was broken, or prevented by the cough and fever, and there were profuse sweats every morning ; but the expected diarrhœa had not yet appeared.

In the opinion of one of the most experienced practitioners in this country, as well as mine, the case was desperate ; nor did we think our patient could live above three or four weeks at the utmost, apprehending the colliquative diarrhœa would soon come on, and prove fatal ; or, that the sudden rupture of the supposed vomicæ in the lungs would occasion immediate suffocation.

Few remedies were ordered, and these merely palliatives ; laudanum to procure sleep, and elixir of vitriol to check the sweats, &c. The Peruvian bark, at the desire of the patient's relation, was tried, but in small quantities and for a short time. There was no appearance of its having done either good or harm.

The usual regimen, ordered before I saw the patient, was continued afterwards, and with the usual success in such circumstances ; the patient growing weaker, and the symptoms, especially the hectic fever and sweat likewise, increasing daily till the elixir of vitriol was used.

No change in the regimen was intended by us ; but a natural craving for some kind of solid animal food was gratified, from a conviction that the indulgence, as the case was desperate, could do no harm : yet no idea was entertained,

tained, that it could be in the least beneficial to the patient.

Oysters were the first kind of animal food longed for and tried ; then crabs ; then a bit of fowl ; and, in about three weeks, plain butcher's meat, and at the same time a small quantity of port wine.

With this new regimen the patient grew better apace, recovered flesh and strength, and in a few weeks was able to take exercise, first in a carriage, and afterwards on horseback.

The hectic fever was soon moderated, and at last removed, as was indeed every symptom of *phthisis*.

The patient, after experiencing repeated vicissitudes of seasons, and some of them very inclement ones, is now alive and well, though I apprehend not yet free from the danger of future phthisis, being subject still to cough, and other catarrhal complaints, on exposure to cold and moisture.

These, however, are commonly removed with little difficulty, by the simple remedy of riding, which my patient has continued to employ."

The second plan of cure is that of Dr. MOSES GRIFFITH, who before his death, when, as I imagine, he was about fourscore years of age, gave an account of a peculiar practice, then warranted by long experience, in what he considered as true pulmonary phthisis with ulcers in the lungs.

In hectic fevers, not attended with any great degree of heat and thirst, he gave the following :

R Myrrh.

℞ Myrrh. dr. 1. solve terendo in mortario c. Kali,
dr. $\frac{1}{2}$. Aq. Alexiter. un. $6\frac{1}{2}$. Spirit cujuslibet
dr. 6. Dein adde ferri vitriolat, gr. 12. Syr.
simp. dr. 2.

M. f. H. 4. c. c. H. 1. ter in die, augendo dosin
si moderati fuerint calor & sitis.

That is,

Take Myrrh one dram, grind it in a mortar with salt
of wormwood half a dram; alexiterial water six
ounces and an half; any kind of spirit six drams.
To these must be added twelve grains of salt of steel,
syrup of sugar two drams; to be divided into four por-
tions, of which one is to be taken three times a day,
increasing the dose if the heat and thirst still conti-
nue to be moderate.

In hectic fevers, when the heat and thirst are
great, with a dry skin, hard pulse, cough with dif-
ficulty of expectoration, and flushings in the face;
after bleeding and cleansing the first passages he
gave the following:

℞ Myrrh. dr. 1. solve terendo in mortario cum Aq.
Alex. un. $6\frac{1}{2}$. Nitri, gr. 32 ad 40. Sal. Mart.
gr. 12. Syr. simp. dr. 2.

M. f. H. 4. c. c. H. j. ter in die.

That is,

Take Myrrh one dram, grind it in a mortar with alex-
iterial water six ounces and an half, any kind of spi-
rit one ounce, nitre from thirty-two to forty grains,
salt

salt of steel twelve grains, syrup of sugar two drams ; to be divided into four portions, of which one is to be taken three times a day.

This practice has been adopted by many eminent physicians, and been attended sometimes with success.

The next method of cure, first recommended, as I apprehend, by Dr. MARRYOT of Bristol, was, to give daily an emetic in the morning, and balsam of capaiva twenty drops morning and evening.

For his emetic he took, tartarized antimony one grain, ipecacuanha three grains ; but, in case of diarrhœa, in the place of this, he judiciously substituted blue vitriol one grain, with ipecacuanha four grains.

And, agreeable to the practice first recommended by Dr. Moses Griffith, he gave steel, as may be seen in the subsequent prescription, where it is combined with bark.

℞ Cinchon. dr. 6. Extr. Glycyrr. dr. 2.

Ol. Anisi, gtt. 40.

Limat. ferri, scr. 2.

Mucil. Gum Arab. q. s. f. E.

c. c. M. N. M. bis die.

That is,

Take the Peruvian bark six drams ; extract of liquorice two drams ; oil of aniseed forty drops ; filings of iron two scruples ; mucilage of gum Arabic a sufficient quantity to make an electuary, of which the size of a nutmeg is to be taken twice a day.

When

When the hectic fever was strong, he substituted two scruples of nitre for the iron filings, to be taken twice a day.

This practice is in some measure conformable to that of Dr. FOART SIMMONS, who has written most judiciously on the treatment of consumptions, and recommends the emetic of blue vitriol, in doses of from two grains to ten; after having previously drank half a pint of water.

He likewise administers the balsam of copaiva, in doses of one dram, on sugar, in the suppurative stage.

Part of this practice, with its beneficial consequences, I have had an opportunity of witnessing in the practice of Dr. ROBERTS, of Southampton; particularly in the case of a young lady aged twelve, who, with a violent cough disturbing her rest, and attended by a hectic most distinctly marked by the evening exacerbation and the morning sweats, had the circumscribed red spot in the cheeks, and expectorated a quantity of mucus mixed with pus which sunk in water.

To this young lady he gave the emetic of blue vitriol, in the smallest doses, every morning. This brought up daily a considerable quantity of phlegm, and in ten days effected a perfect cure.

A fourth method of cure, practised by the ingenious and learned Dr. BEDDOES at the Hot-wells, and by his no less ingenious friend in London.

Dr. THORNTON, is, to make the patient breathe *hydrogene*, or *azotic gas*, and sometimes *carbonic acid gas*.

Of his views upon this subject, Dr. BEDDOES has indulged us with a short account in his late publication called, "Observations on Calculus, Sea Scurvy, Consumption, Catarrh, and Fever."

This gentleman attributes *scurvy* to the deficiency of *oxygenation*, and *phthisis* to its *excess*.

It is now pretty universally understood, that our atmosphere contains, as already stated, two kinds of air, *vital* and *azotic*, of which the former is composed of *oxygen* and *caloric*.

It is now likewise understood, that the office of the lungs in animals is to absorb the *oxygen air*, by which a *stimulating power* is communicated to the blood, *irritability* to the solids, and *heat* to both.

Hence in proportion to the quantity of *oxygen air*, derived by respiration from the air, the pulse is quickened, whilst by its defect the pulse is rendered slow and weak.

To these observations it must be added, as a well established and acknowledged fact, that in *phthisis* the blood is of a florid colour, the pulse is quick and hard; whilst in *scurvy*, meaning always the sea scurvy, the blood is thin and fizy, the crassamentum is dissolved, and the pulse is very feeble.

From these facts it is induced, that in *phthisis* there is an excess of *oxygenation*, and in *scurvy* a *deficiency*.

In confirmation of this induction it may be remarked, that, after a most careful investigation, it is observed, that scurvy is induced by vitiated air, and relieved by oxygen.

But what is most to the purpose is, that phthisical patients, breathing *oxygen air*, have the fever greatly increased; but, by breathing common air mixed with *hydrogene*, *azotic*, or *carbonic acid*, air, the hectic fever is abated, and the expectoration becomes less offensive.

Should the hypothesis of Dr. BEDDOES be confirmed; and should he be able to effect a cure in *phthisis* by inducing *scurvy*, a disease which may be easily removed, he will deserve a statue of gold to be erected to his memory!

I am inclined to hope that in *phthisis hæmoptoica* this practice will be useful, but in *phthisis tuberculosa* I fear little advantage can be expected from it.

Genus XXXII. *Hæmorrhoids*.

The *Piles*.

THE symptoms are, flux of blood from the anus; pain there, and hæmorrhoidal swellings; vertigo; pain in the loins, and head-ach.

INTRODUCTION.

THE *hæmorrhoidal flux* may be either active or passive; the former salutary when moderate and critical, but not so when untimely or excessive; the latter useless at best, and frequently injurious.

It must be considered as excessive and injurious, when it destroys the appetite, weakens the digestion, prevents nutrition, or brings on spasmodic affections, with other symptoms of debility.

In such circumstances it terminates in either hectic or in dropsy.

The active hæmorrhoidal flux is usually preceded and attended by vertigo and head-ach; weight and pain in the back and loins; sometimes by numbness in the thighs; constriction and sense of coldness in the extremities; flatulence in the lower belly; hard pulse; dryness of the fauces; pale and deficient urine, with frequent inclination to make water.

The blood at first is black and clotted, but afterwards red, then sometimes serous with some resemblance to the white of an egg.

This discharge may be internal or external, periodical or accidental, either directly from the arteries, or it may first stagnate in the cellular texture, and form internal or external tumor.

The

The persons most subject to active and periodical discharge of blood by the hæmorrhoidal vessels are, such as are of a florid complexion, with a lax fibre, who indulge freely at a plentiful table with wine and spices, eating heartily and taking little exercise.

Females of this description, during pregnancy, or with obstructed catamenia, are liable to this complaint.

It is sometimes a salutary and critical discharge in *mania*, *melancholia*, *epilepsia*, *asthma*; and, being unseasonably checked, it may induce any one of these diseases, or even *phthisis*, *hydrops*, *schirrus*, *nephritis*, *apoplexia*, and *paralysis*.

SECTION I.

INDICATIONS OF CURE IN THE ACTIVE HÆMORRHOIDAL FLUX.

DURING the flux little can be done, but to keep the body cool and perfectly at rest, whilst moderate astringents, such as conserve of roses with elixir of vitriol, may be internally exhibited.

To prevent a return recourse must be had to temperance and exercise.

Spices and spirituous liquors must be forbidden, and violent exertions, mental or muscular, must be carefully avoided.

Lemonade, or cold water acidulated with either elixir of vitriol or with vinegar, may be the ordinary drink.

The body should be kept open with tamarinds and rhubarb; with lenitive electuary, or with sulphur and cream of tartar; to which powder of elecampane and liquorice may be added, to promote a determination to the skin.

Moderate astringents, such as conserve of roses, chalybeate waters, or the Peruvian bark in small doses, have an excellent effect; but the more powerful astringents must be avoided.

The learned Professor of Hull, on this subject, most judiciously observes, "*nihil magis ad perniciem ducit quam valde debilitatis corporibus, styptica, astringentia, opiata, vel alia fortiora remedia exhibere,*"
Vol. I. p. 344.

SECTION II.

INDICATIONS OF CURE IN PASSIVE HÆMORRHOIDAL FLUX.

THIS admits of more powerful tonics and astringents, to brace the relaxed vessels. With this intention, a generous diet, cool air, and exercise, are to be strongly recommended.

But as this species most frequently is induced by costiveness, the bowels must be preserved flexible by means of sulphur and cream of tartar, made into an electuary with pulp of tamarinds, of cassia, or of prunes.

Should the tumor be external, leeches may be applied; or should the pain be exceedingly distressing, a liniment may be composed of the unguentum album and camphor equal parts, with spirits of wine a sufficient quantity, to which a few drops of liquid laudanum may be occasionally added.

In such circumstances two preparations have been much recommended.

℞ Sperm. Ceti, dr. 3. Ol. hyoscyam. dr. 1.

Camph. gr. 6. Croci, gr. 10.

M. f. Liniment quo calide inunguentur tumores.

The other is an epitheme composed of lime water, rose water, elder flower water, camphorated spirit, with a small quantity of sugar of lead, to be applied warm on linen to the part.

SECTION III.

REMEDY FOR FISTULA.

WHEN the hæmorrhoidal tumors have been suffered to inflame to a considerable degree, and by intemperance or ill-treatment have been hurried on

to suppuration, fistulous ulcers may be formed, and these, when they become inveterate, require the assistance of the knife. But, previous to this, it may be expedient to try what can be done by the paste formerly in great request, when administered by Dr. Ward.

It is thus prepared :

Take elecampane and black pepper, of each one pound ; fennel seed three pounds ; powdered and sifted through a fine sieve. Then take honey and sugar, of each two pounds ; melt these together over a gentle fire, scumming them till they become bright as amber. When cool, mix and knead this mixture and the powders well together.

Of this a bit as big as a nutmeg may be taken twice a day.

From this preparation the celebrated Dr. Marryot derived the ingredients of his medicine, only varying the proportions, and combining with them sulphur and balsam of copaiva.

SECTION IV.

OF RESTORING THE HÆMORRHOIDAL FLUX.

WHEN habitual hæmorrhoidal flux, being unseasonably stopped by styptics and powerful astringents, has been succeeded by some more troublesome or dangerous

dangerous disease, it may be expedient to restore this salutary and critical discharge.

For this purpose it has been recommended to bleed in the foot; but this alone will be insufficient for the purpose. It will be needful, therefore, to give small doses of aloes, to be repeated every night till the effect desired is produced.

Genus XXXIII. *Menorrhagia*,

Flooding,

THE proper symptom is immoderate flow of the menses or lochia,

SECTION I.

OF MENORRHAGIA AS DISTINGUISHED INTO ACTIVE AND PASSIVE.

Active menorrhagia is preceded by head-ach, vertigo, difficulty of breathing, chilliness, then flushing heat, frequent pulse, costiveness and thirst, with more than common pain in the back and loins.

The

The proximate cause is morbid increase of the hæmorrhagic effort in the uterine vessels.

Passive menorrhagia has the usual symptoms of debility, loss of appetite, indigestion, listlessness, a weak and frequent pulse, palpitation of the heart, want of breath, a pallid countenance, coldness of the extremities, with œdematous swelling of the feet, fainting and low spirits, with disturbed and unrefreshing sleep.

This species is frequently preceded and followed by *leucorrhœa*.

The proximate cause is a præternatural laxity in the extremities of the uterine vessels.

The remoter causes are, such as increase the determination of blood to the uterus; such as irritate or overstrain its vessels; and such as induce general debility and relaxation of the system.

SECTION II.

INDICATIONS OF CURE IN ACTIVE MENORRHAGIA,

THE indications derived from the causes remote and proximate are,

To avoid spices, spirits, and high feeding; heat; violent exertions, either mental or muscular; and whatever naturally stimulates the vessels of the uterus.

To

To live principally on milk and vegetables; to drink cold water; to keep the body open by rhubarb, sulphur, and soluble tartar; or, if it should be needful, to clear the stomach by emetics, and, when the pulse admits of it, to use the lancet.

SECTION III.

INDICATIONS OF CURE IN PASSIVE MENORRHAGIA.

THESE are,

1. *To avoid all occasional causes of debility.*
2. *To invigorate the system by astringents and by tonics.*

The medicines I have always given in common cases are the following:

℞ Cinchon. un. 1. Alum, dr. 2.
 Conserv. Rosar. dr. 12.
 Syr. Ros. q. s. f. Elect.
 c. M. N. M. ter in die,

That is,

Take Peruvian bark one ounce; alum two drams;
 conserve of roses half an ounce; syrup of roses a sufficient quantity to form an electuary.

℞ Cinchon.

℞ Cinchon. un. 1. Ter. Japan. Limat ferri, āā dr.
 1½. Syr. Zinzib. q. s. f. Elect.
 c. M. N. M. ter in die.

That is,

Take Peruvian bark one ounce; Japan earth and filings of iron, each one dram and an half; syrup of ginger a sufficient quantity to form an electuary.

℞ Cinchon. un. 1. Rubig. Ferri, dr. 4. Conf. Cort.
 Aurant. un. 2. Pulv. Arom. dr. 2. Syr. Cort.
 Aurant. q. s. f. Elect.
 c. M. N. M. ter in die.

That is,

Take Peruvian bark one ounce; rust of iron half an ounce; conserve of orange-peel two ounces; aromatic powder two drams; syrup of oranges a sufficient quantity to form an electuary.

Of either of these the size of a nutmeg is to be taken three or four times a day.

These medicines have seldom disappointed my expectations, either in *menorrhagia rubra* or in the *menorrhagia alba*.

Other practitioners have given tonics and astringents in a different form.

Thus, for instance, Professor Hoffman, from his own experience, recommends the powder of Heurmius, of which the following is the form:

℞ Sem. hyoscyam. Sem. Papav. Alb. āā dr. 1. Hæmatit. Coral. rub. āā dr. ½. Camp. scr. ½.
 M. c. dr. ½. m. & v.

That

That is,

Take the seeds of hyoscyamus and of white poppies, of each one dram ; hæmatite and red coral, of each half a dram ; camphor half a scruple. Mix. The dose is half a dram morning and evening.

The same caution will be useful here, as in the preceding genus, to avoid the most powerful astringents, when the vital energy has been much reduced, lest the hæmorrhage should be thereby increased.

In cases of uterine hæmorrhages, after parturition or abortion, when the patient is exhausted by a loss of blood, it has been common to give cordials ; but these, whether aromatic or spirituous, should at first be cautiously avoided, because they excite the circulation and increase the hæmorrhage.

The best practice, in such cases, has been found to be, the application of cold injections and mechanical stimulus locally applied, to excite contraction, both in the fibres of the uterus and in the extreme arteries.

At the same time the patient must be exposed to the action of cool air, and must be perfectly at rest.

A clyster, with fifty drops of laudanum, may be thrown into the rectum.

SECTION IV.

PARTICULAR DIRECTIONS IN CASES OF MENOR-
RHAGIA ALBA.

THIS flux, known also by the name of *fluor albus*, or *the whites*, must be, in recent cases, carefully distinguished by its proper symptoms, such as general debility, loss of appetite, indigestion, faintness, palpitation of the heart, pain in the loins, and irregularity in the menstrual periods; or by its preceding and following this discharge.

But if, instead of these symptoms, heat of urine with itching are observed to precede, and frequent desire to make water accompanies, this flux, especially if the discharge should be green or yellow, the injured female may be certain that her's is not a *fluor albus*.

Should it, however, prove to be of the two, that from which least is to be apprehended, the same medicines nearly will be needful, as have been recommended for the passive menorrhagia, with the addition of *oxygen air*; and these I have seen universally attended with success.

Dr. Whytt sometimes, in obstinate cases, ordered *alum whey*, to be made by putting one dram of the alum to a pint of boiling milk. Of this he gave three ounces sweetened with sugar four times a day.

℞ Lact. recent. bullient, ℥ j.

Alum. rup. dr. i.

M. ut fiat coagulum & fero colato adde Sach.
alb. un i.

Capiat un 3. 4. r. in die.

Dr. Marryot recommended always, in the first place, an emetic; then balsam copaiva gtt. 20, or tinct. cantharid. coch. i. parv. Or:

℞ Conf. Ros. Rub. un. i. Rhei, dr. 2.

Limat. ferri. Galanga, āā dr. i.

Tinct. Cantharid. q. s. f. Elect.

c. M. N. M. bis die.

That is,

Take conserve of red roses one ounce; rhubarb two drams; filings of iron and galangal, of each one dram; tincture of cantharides a sufficient quantity to make an electuary. The dose is a bit as big as a nutmeg twice a day.

In obstinate cases he ordered a solution of blue vitriol to be injected into the uterus twice a day.

℞ Cupri Vitriolat, scr. i. Aq. bullient, un i.

f. Injectio bis die utend.

Sea bathing is excellent in this complaint.

IN Dr. CULLEN's Nosology

The fifth and last order of the class PYREXIÆ is PROFLUVIA; of which the character is, Pyrexia with increased excretions.

It contains two genera, Catarrhus and Dysenteria; of which I have referred the former to PHLEGMASIÆ, and the latter to SPASMI.



Class II. NEUROSES.

NERVOUS DISEASES.

THE distinctive character of this class, as we have already mentioned in the first page, is,

Affections of sense and motion disturbed; without either idiopathic Pyrexia or topical disease.

The orders of this class are four.

1. *Comata.*
2. *Adynamiæ.*
3. *Spasmi.*
4. *Vesaniæ.*

Of which the pathognomic symptoms are the following;

I. COMATA.

A diminution of the power of voluntary motion, with sleep, or with the senses impaired.

2. ADYNAMIÆ.

A diminution of the involuntary motions of either vital or natural functions.

3. SPASMI.

A morbid contraction or motion of muscular fibres.

4. VESANIÆ.

The judgment impaired, without either COMA or PYREXIA.

Of the Order COMATA we have two genera.

1. *Apoplexia.*

2. *Paralysis.*

Class II. NEUROSES. Order I. COMATA.

Genus XXXIV. *Apoplexia*.

Apoplexy.

THE symptoms are, abolition of the powers of sense and motion, with sleep and sometimes snoring; the respiration and motion of the heart remaining.

These are the symptoms during the paroxysm; others precede to warn us of its approach.

Such are, fulness of the head; epistaxis; giddiness; loss of memory, and confusion of thought; somnolency; deep sleep; distressing incubus; imperfect articulation; slow speech; vision disturbed by corruscations of light or by transient darkness; ringing in the ears or deafness; tremors, numbness, and a sense of creeping on the limbs.

SECTION I.

OF THE PROXIMATE CAUSE OF APOPLEXY, AND
DISTINCTION INTO SPECIES.

THE proximate cause of *apoplexy* is undoubtedly pressure on the brain, either by external violence or

by tumors, but usually, and as constituting the disease, of which I am about to treat, either by distension of blood-vessels or by effusion of fluids, which may be either of blood from ruptured vessels, or of serum passing by exhalants.

This lays the foundation for distinguishing apoplexy into sanguine and serous.

Besides these species Hoffman has taken notice of a third, called by him *spasmodic*, but strictly speaking it is sanguine.

Coma is the slightest kind of apoplexy, being nothing more than deep, yet morbid, sleep.

SECTION II.

OF THE DEGREES OF APOPLEXY.

WE are not sufficiently acquainted with the nature and functions of the brain to determine, what degree of pressure, and where applied, produces loss of voluntary motion, whether general or partial; or this combined with loss of any, or of all, the senses.

Much less are we able to point out, what degree or what extent of pressure, and where applied, is necessary, by the suspension of the vital functions, to deprive the animal of life.

Yet should we even renounce the notion, of different sets of nerves designed by nature for the several purposes of sensation, of voluntary and of vital motion ; we can readily conceive one reason, why the action of the lungs, of the heart, and of the intestines, should continue, when the senses fail and when volition ceases.

This may arise from their irritability, which, although diminished, is not instantly destroyed by pressure on the brain, and from the stimulus of blood, of air, of food, which without the least diminution continue to excite those organs.

SECTION III.

OF THE SANGUINE APOPLEXY, AND OF CARUS.

THE specific symptoms are, a florid colour, with flushings of the countenance ; the veins of the head and neck are turgid ; the face is bloated ; the eyes protuberant, and suffused with tears ; the heart beats strongly ; the pulse is full ; and the animal heat is high.

The age most subject to sanguine apoplexy is from forty to three score. It seldom attacks young people, although in them confessedly the determination is to the head, because in youth *epistaxis*, and,

as we advance to manhood, *hæmoptysis*, prevents congestion in the vessels of the brain.

Persons of a sanguine temperament and of a relaxed fibre, the indolent, the corpulent, the plethoric, and such as are debilitated by age, by intemperance, by excessive evacuations, or by disease, with those who have omitted their accustomed bleedings, or in whom epistaxis, hæmoptysis, the lochiæ, catamenia, or the hæmorrhoidal flux, have been suppressed, are the persons most exposed to sanguine apoplexy.

The predisposing cause, therefore, is, fulness of vessels, with a relaxed fibre; or it may be, either plethora or debility alone.

The occasional causes are observed to be,

1. Mental stimuli, or violent passions of the mind, such as anger and terror; *anger*, which quickens the respiration and the pulse, augments the animal heat, and determines the blood with increased impetus to the vessels of the head: or *terror*, which, inducing spasmodic stricture on the surface of the body, drives the blood in too great abundance from the circumference to the centre, to the heart, and to the brain; whilst *fear* only sinks or retards the pulse, slowly diminishes the heat, and quietly extinguishes the vital flame.

Sydenham and Hoffman have remarked, that when *terror* succeeds to copious hæmorrhage of any

kind, or to the pains of parturition, the almost inevitable consequence has been a fatal apoplexy.

2. Material stimuli, such as wine, brandy, opium, in considerable quantity, with the stimulus of food in too great abundance; warm rooms, hot bathing and a scorching sun.

3. Muscular exertion, if sudden and violent, by driving the blood into the vessels of the brain; or tight ligaments about the neck, by preventing its return.

4. By spasmodic stricture in any part of the arterial system.

This, it is evident, may induce the determination to the brain already mentioned. For the arteries do not act merely as elastic tubes, but have their muscular coats; by which their dimensions may be much contracted.

We have noticed above the operation of anger and of terror, and have only here to add, that the tremor, debility, and sudden convulsions, which attend these passions, sufficiently denote affections of the brain.

In these passions the respiration labours, and the return of blood from the vessels of the head is checked, at the same time that the spasmodic con-

striction of the arteries increases the determination to the brain.

In cases of spasmodic stricture the face is red, the pulse is full and frequent, a warm and copious sweat breaks out, and frequently the apoplexy ceases.

The persons subject to this more favourable form of the disease in question are, the young, the sanguine, and those who have an irritable fibre, more especially hysterical and epileptic patients. In them it is the least fatal, and seldom terminates in palsy. Yet a mortal epilepsy ends universally in the apoplectic stroke.

I am inclined to think that there is some kind of spasmodic stricture, when, as frequently happens, apoplexy is consequent on the sweating of the feet imprudently repressed, or any herpatic eruption checked, or from the irritation of *worms* in the alimentary canal, as in the *apoplexia verminosa* of Sauvage.

The same observations may apply to apoplexy, when it arises from affections of the stomach.

Dr. Fothergill gives some countenance to this opinion; for, as it appears by the London Medical Journal, he attributes the apoplectic stroke, in some cases, to a distended stomach and to overloaded bowels: and Van Swieten in his Commentaries, § 1017, not only delivers the same doctrine, but gives an instance of a friend who was cured by a copious and spontaneous vomiting.

In confirmation of this idea it may be observed, that many are seized with apoplexy after having fed voraciously at a venison or a turtle feast.

The injury, in my opinion, does not arise so much from distention of the stomach creating a pressure on the aorta, as from the stimulus of food and sympathy; because it happens not merely during sleep, when the glutton is lying on his back, but whilst the body is erect, and before the gorged morsels can ferment.

Carus may derive its origin from the same cause with spasmodic apoplexy.

Of this, combined with lethargy, we have a curious case in Hoffman.

A MAN aged 66, thin yet plethoric, and accustomed to bleed twice a year, had omitted this evacuation for twelve months, when, from terror, he was seized with coldness in his extremities, oppression and difficult respiration, yet his face continued bloated and red. Soon after this attack he had pain in his head, heaviness, vertigo, lethargy.

In this condition he undertook a journey, but he was unable to proceed, being prevented by so profound a sleep, that for four days he could neither stand nor open his eyes.

At length being roused, he found great languor, prostration of strength, and perpetual desire of sleep. He breathed freely, but his pulse was oppressed. He had no appetite, was costive, and made little water.

The Professor, in these circumstances, bled him largely in the foot; gave him a laxative antispasmodic clyster; recommended the warm pediluvium at night; applied spirit
of

of hartshorn to his nostrils; and ordered him to take sal volatile with a tincture of antimony; by which treatment he was soon restored to health.

In other cases the Professor removed similar affections by antimonial emetics.

That in sanguine apoplexy there is really distention of the vessels, producing rupture, extravasation, and pressure on the brain, is clearly proved by the flux of blood and serum from the nostrils after death, as well as by multiplied dissections. Dr. George Fordyce is of opinion, after having examined the brains of ninety-eight apoplectic and paralytic patients, in all of which he discovered extravasated blood, that this is the most common cause of these diseases.

From the operation of remote causes, as already stated, the existence of such a congestion can be readily conceived, when we consider, that one tenth nearly of the blood circulates with great velocity in the vessels of the brain, and that these are tortuose, minute, and not, as in other parts, defended by strong membranes.

Indeed rupture and distention would more often happen, were it not for a most provident contrivance well known to the anatomist, by which the blood is checked and retarded as it approaches to the brain.

Carus, as a slighter sanguine apoplexy, is attendant
upon

upon fevers chiefly of the intermittent species ; or it may be induced by passions of the mind.

In this there is some perception, but not of long continuance ; some sensation, yet small.

The patient seldom awakes spontaneously, and, when with difficulty roused, soon sleeps again.

The epidemical Synocha of 1673, described by Sydenham, was attended in younger subjects by *delirium* ; in adults by *carus*, during which the patient slept for some weeks, or, as it appears, from 28 to 30 days, and so profoundly that they could scarcely be roused to take their usual drink or medicines.

This symptom was frequently induced by warm sudorifics, and relieved or rendered safe by bleeding and refrigerant clysters.

Carus may be brought on by extreme intoxication.

Van Swieten tells us of a man, who in a drunken fit slept four days, and awoke only as two surgeons, having shaved his head, were preparing to trepan him.

SECTION IV.

INDICATIONS OF CURE IN SANGUINE APOPLEXY
AND IN CARUS.

THESE are,

1. *To diminish the pressure on the brain.*
2. *To restore tone to the debilitated vessels of the brain and to the system in general.*

The first intention may be answered,

1. By copious bleeding from the jugular veins, from the arm, and from the temples.

The relief received, together with the fulness, hardness, and frequency, of the pulse, must determine the practitioner as to the propriety of repeating the bleeding.

2. By carminative clysters and moderate cathartics, such as senna, rhubarb, nitre, or soluble tartar, with tamarinds and some kind of aromatic water.

R Decoct. Avenæ tenuif. ℥ j.

Flor. Chamæmel. m. i.

Sem. Cumin. un. $\frac{1}{2}$.

Coque & colaturæ adde Olei Olivar. un. i.

Sach. dr. 3. M. f. Clyfma.

That

That is,

Take thin oatmeal gruel one pint, chamomile flowers
a handful, cumin seeds half an ounce; boil and strain.
Then add olive oil one ounce, sugar three drams.
Mix for a plyster.

℞ Tamarind. un. 1. Coque in Aq. font. ℥ j,
et colaturæ adde
Rhei; Kali tartarifat. āā dr. 2.
Aq. Cinnamom. un. 1. M.
C. un 3. alternis diebus mane.

That is,

Take tamarinds one ounce; spring water a pint; rhu-
barb and soluble tartar, of each two drams; cinna-
mon water one ounce. Mix.

Three ounces to be taken every other day, in the morn-
ing.

℞ Rhei;
Kali tartarifat. āā scr. 2.
Pulpæ Tamarind. q. s. f Bol.

That is,

Take rhubarb and soluble tartar; of each one scruple;
the pulp of tamarinds sufficient to make a bolus.

It must be here remarked, that during the pa-
roxyfm, to prevent the accumulation of blood in
the vessels of the brain, the patient must be sup-
ported in a chair, and his apartment must be pre-
served cool.

The

The second intention is chiefly prophylactic.

This may be answered by temperance, cool air, and constant exercise, with gentle tonics and astringents; but more especially by avoiding whatever has a tendency to induce debility, and paying particular attention to preserve the feet from cold.

Spasmodic apoplexy being merely a variety of the sanguine, the indications of both will coincide; but the method of answering those intentions will not be perfectly the same.

The spasmodic certainly does not admit of bleeding to the same extent as the purely sanguine, for which reason the young practitioner must pay particular attention to the pulse, the countenance, and the respiration, whilst the blood is flowing; and, if the symptoms are not aggravated, he may proceed with confidence.

In this form of the disease, to diminish the pressure on the brain, it will be needful to resolve the spasm which causes the determination to that vital organ.

This intention may be answered, after bleeding, by removing the occasional cause of spasm. If the spasm is occasioned by viscid mucus, bile, or indigested fordes in the stomach; an emetic may be given.

If the cause is in the bowels, they may be safely evacuated by the carminative clyster already mentioned,

tioned, to be repeated soon if needful, or at the distance of some hours.

If it be *worms*, anthelmintics will destroy them.

In this form of apoplexy, the legs should be plunged into warm water, which will both relieve the spasm and make a derivation from the head.

SECTION V.

OF SEROUS APOPLEXY, AND OF LETHARGY.

THE specific symptoms are, a pale and bloated countenance; a weak and languid pulse; sleepiness and torpor; coldness in the extremities; loss of memory, and decay of faculties; slow speech; shortness of breath during motion; swollen and watery eyes; scarcity of urine, and universal tendency to dropsy; with other symptoms marking its gradual approach more certainly than that of the sanguineous.

The persons most liable to the attack of serous apoplexy are, such as are of a relaxed habit; dram drinkers; the aged and infirm; the indolent and sedentary; the studious, who grow pale over their books; and such as have been worn out by grief, more especially if confined to damp and gloomy habitations.

As to the occasional causes, they are in some measure the same with those already mentioned in sanguine apoplexy.

Yet here it may be remarked, that the sanguine may produce the serous, as the natural consequence of a preternatural afflux and congestion of blood in the vessels of the brain.

And, moreover, it has been frequently observed, that the untimely suppression of copious evacuations from the salivary glands, and the sudden drying up of ulcers, have produced the same effect.

It is sometimes relieved by fever; at other times by spontaneous purging of watery humours; but it most frequently terminates in palsy.

That, in such cases, there is really an effusion of serum in the ventricles and sinews of the brain, has been evinced by numerous dissections.

Lethargy is a slighter kind of serous apoplexy. In this the patient sleeps almost incessantly, for although he may awake spontaneously and easily be roused, yet he soon forgets what has been said, appears void of animation, and slumbers instantly again.

It sometimes succeeds phrenitis, and usually terminates in apoplexy.

SECTION VI.

INDICATIONS OF CURE IN SEROUS APOPLEXY,
AND IN LETHARGY.

THESE are,

1. *To remove the pressure on the brain, as the proximate cause.*
2. *To obviate debility, as the predisposing cause.*
3. *To avoid the occasional causes of the disease.*

To answer the first intention we have recourse,

1. To blisters on the head, and to antimonial emetics.

R Antimon. tartarifat. Mercur. vitriolat. āā gr. 5.
M. pro Emetico.

Or take any of the formulæ from my Compendium.

2. To clysters, and to powerful cathartics, such as aloes, jalap, scammony, colocynth, and calomel.

℞ Decoct. avenæ, ℥ j.
 Ol. Oliv. ʒ j. Salis Marin. ʒ ij.
 M. f. Enem. p. r. n. inj.

That is,

Take oatmeal gruel one pint, olive oil an ounce, common salt two drams, for a clyster.

℞ Aloe soc. Colocynth. Scammon. āā gr. 10.
 Jalap, Calomel, āā gr. 30.
 Syr. Simp. q. s. f. Pil. No. 40.
 c. 2. alternis diebus mane.

That is,

Take aloes, colocynth, and scammony, of each ten grains; jalap and calomel, of each thirty grains; syrup of sugar a sufficient quantity. Make forty pills, of which take two every morning.

℞ Calomel, gr. 10. Jalap, gr. 15,
 Zinzib. scr. 1. M. mane sumend.

That is,

Take calomel ten grains, jalap fifteen grains, ginger one scruple. Mix, and take it in the morning.

Or, instead of these, No. 12 and 13 of my Compendium may be occasionally substituted.

3. To diaphoretics, and more especially to diuretics of the stimulant order, such as the balsams and terebinthinates, or rather ammonia combined with æther, in equal parts, to the amount of from a dram to four scruples three times a day.

Setons in the neck are useful.

To

To answer the second intention tonics and astringents must be resorted to, such as bitters and the Peruvian bark, but especially combined with steel.

R Quassia, dr. 1.
 Cassia Lig. dr. $\frac{1}{2}$.
 Aq. bul. un. 8. M. f. Infus.
 Colaturæ. Un. 3. adde Cinchon. sc̄t. 1.
 M. c. o. 8a. horâ.

That is,

Take quassia one dram ; cassia lignea half a dram ; boiling water eight ounces. Make an infusion. Strain it ; and to three ounces of the infusion add one scruple of Peruvian bark for a dose, to be repeated every eight hours.

R Cinchon. un 2.
 Limat. ferri, dr. 3.
 Valerian, dr. 4.
 Syr. Zinzib q. s. f. Elect.
 c. M. N. M. ter in die.

That is,

Take Peruvian bark two ounces ; steel filings three drams ; valerian half an ounce ; syrup of ginger sufficient to make an electuary. Take the size of a nutmeg three times a day.

All the astringent formulæ from 76 to 83 in my Compendium will be useful.

During the paroxysm I would wish to recommend the inspiration of *oxygen air*.

Dr. Woodford, of Bristol, has communicated a case of *serous apoplexy*, in which his judicious preceptor Dr. Gregory discovered that acuteness of discernment for which he is justly distinguished as a medical practitioner.

C. D. labourer in Edinburgh, aged 51, addicted to the drinking of spirits, was admitted into the Royal Infirmary with anasarca and ascites.

A few days after admission the anasarca in the inferior extremities suddenly receded, and presently after, the face having swelled, symptoms of Coma appeared, which gradually increased to a perfect apoplexy.

Dr. Gregory directed the head to be shaved, a blister to be applied, and two or three doses of a strong cathartic, composed of jalap and calomel, to be administered; by which the patient was speedily relieved and soon dismissed.

Genus XXXV. *Hydrocephalus Internus*.

THE pathognomic symptoms are, in children, lassitude, a slight Pyrexia, pain in the head, a sluggish pulse, drowsiness, and dilated pupils.

SECTION I.

OF THE PROGRESSIVE SYMPTOMS AND TERMINATION
OF HYDROCEPHALUS.

IN infancy the sutures of the cranium open.

M. Petite, in the Memoirs of the Academy of Sciences at Paris, has remarked other symptoms at the commencement of this disease, which are worthy of attention.

These are, convulsive motions of the lips and eyelids; biting the lips; picking the nose; grinding the teeth; costiveness or purging; languor of the eyes: paleness; debility; heaviness, and depression of spirits; sleepiness, with perpetual moaning, and sometimes inability to support the head upright. He observes, that the disease comes on after *worms*, painful dentition, and violent convulsions.

To these symptoms Dr. Fothergill adds, nausea, short and disturbed sleep; and, towards the close of the disease, urine and stool coming insensibly away; the iris immoveable; the heat great; breathing suspicious; the pulse trembling, and quick beyond the possibility of counting; after which a spasm finishes the whole.

The patients of M. Petite died convulsed, and he found water in the brain.

SECTION II.

OF THE CLASS OF HYDROCEPHALUS.

DR. CULLEN could with difficulty satisfy his mind, where he should place this disease.

Boerhaave and Sauvage had arranged it under *dropsy*; but he, dissatisfied, connected it with *apoplexy*: yet more modern practitioners seem inclined to consider it as belonging rather to the *Pblegmastæ*.

I confess myself to be in doubt; not, however, being able to find a better place for it, I have left it where I found it. Time, and more extensive experience, must determine the respective merit of these nosologists.

Dr. Percival observes, that hydrocephalus derives its origin sometimes from inflammation, but most frequently from struma and laxity of fibre, inducing plethoræ, glandular obstruction, and feeble action of the lymphatic system, all which dispose to an effusion of water in the brain.

He remarks, that in such subjects the vessels of the brain quickly lose their tone by distension, in consequence of which torpor, and debility of the whole system, follow.

SECTION III.

OF THE TREATMENT OF HYDROCEPHALUS.

MANY physicians of great eminence profess to have cured this disease by salivation, and their testimony should not hastily be called in question. Yet we must have leave to hesitate, when so respectable a practitioner as Dr. Warren, of Taunton, informs us, that in ten cases, which on dissection had proved to be hydrocephalus, he had tried mercury in vain; and that neither by calomel, nor by mercurial ointment, could he procure a salivation.

The matter is rendered more dubious, when we consider, that many, who were cured by calomel, voided worms; and that many patients, as appears by the testimony of Dr. Foart Simmons, Physician of St. Luke's, who, on dissection, appeared to have water both between the pia mater and the brain and in its ventricles, had yet, when living, no symptoms of hydrocephalus. And further, that one child, under the care of Dr. Warren, who had all the symptoms of this disease, had no water in the brain, nor any thing remarkable, except much viscid phlegm in the intestines.

The mode of application commonly adopted to induce a salivation has been, to rub in the weak

mercurial ointment twice a day and to take calomel at night.

In this way Drs. Mackie, of Southampton, and Percival, of Manchester, succeeded in the cure of what appeared to be hydrocephalus; after which they administered rhubarb and Peruvian bark, to restore the strength.

Genus XXXVI. *Cataphora*.

Catalepsy.

THE symptoms are, sudden loss of sensation and volition; the body and the limbs constantly retaining the position which they had when seized, or which is given to them during the continuance of the fit.

Yet all these symptoms are subject to degrees of intensity.

The eyes are commonly open and fixed; the pulse is natural; the respiration easy; the colour remains unchanged.

Women are more frequently attacked by it than men.

I had placed *cataphora* with Dr. Cullen under apoplexy; but from the most accurate description
of

of this affection, it does not appear to arise from pressure on the brain.

Hollerius, as quoted by Van Swieten, tells us, that he saw a man, who had alternate coma, epilepsy, convulsions, and catalepsy. And Hoffman saw the three last in a young woman.

Here, therefore, it seems to be allied to spasm.

It was brought upon a young woman eight days after she was married against her will, and attacked her as often as she saw, or even thought upon, her husband.

Terror has been known to induce it suddenly. Hence the beauty of the poetic image :

“ *Obstupuit steteruntque comæ, et vox faucibus hæsit.*”

Grief and disappointment, and even pious affections, have had the same effect; and joy has both produced and cured it.

Profound meditation has been accused by Boerhaave, perhaps with reason, as one occasional cause of catalepsy; and, by his commentator, intenseness of thought is considered as nearly related to it: but although men thus engaged can neither see nor hear, like Archimedes at the siege of Syracuse, nor yet move from the spot on which they stand, yet these symptoms alone do not constitute the disease in question.

He therefore quotes a remarkable case mentioned by Galen of a fellow-student, who from deep reflection became suddenly so immoveable that, as he sat holding

holding his pen, with his eyes fixed on his book, he seemed only to be absorbed in thought, till, by shaking and calling, they perceived that he had lost all sense and power of motion.

Stoppage of the catamenia has produced this wonderful disease.

Lambecius, attending the Emperor Leopold in one of his excursions, saw in the Ferol a young woman aged 25, who constantly twice a week, and at intervals every day, lost all sensation, even when needles were thrust into her flesh; and wherever she was taken, remained immoveable like a marble statue, as if she had suddenly beheld Medusa's head.

Van Swieten relates a most interesting case, of which he himself was witness.

A good woman aged about 40, of a rigid fibre, was toasting chestnuts in a frying-pan; when, deprived of sensation, she became suddenly immoveable, till, in his presence, she threw up two living *worms* (teretes), after which she suddenly recovered, and continued toasting her chestnuts, without the least consciousness that any thing had happened. She had no relapse, but for years retained her perfect health.

Actius makes mention of catalepsy relieved by a copious bleeding at the nose.

Hoffman conceives, that freezing first produces *catalepsy*, and then death. And that rapture or ecstasy is to be considered as allied to this affection.

SECTION II.

INDICATIONS OF CURE IN CATALEPSY.

As to the indications of cure little can be said, because we know nothing of the proximate cause, and must, therefore, confine ourselves to this one point in every case, to investigate and to remove the occasional cause of this affection, whether it may be obstructed catamenia, worms, or both united, as in a case relieved by Hoffman. This learned professor says, that he has seen the most obstinate catalepsy cured merely by a change to *wholesome air*, and, with the utmost propriety, he adds, accounting for this effect, “*that one of its component parts uniting with the blood, communicates sensibility and motion to the solids.*” Vol. III. p. 49.

Let the student in this disease tread in the steps of Sydenham, who, when he met with a kind of fever which was new to him, remarked, “*Nihil mihi itaque aliud jam restabat, nisi ut in hunc morbum nudum & ab aliis sepositum accuratissimò examine inquirerem, atque oculo adjuvantia & lædentia quàm diligenter maximè potui, semper intento, viam pro virili, exploratoris instar, prætentarem.*”

Genus XXXVII. *Paralysis.**Palsy.*

The pathognomic symptom is, a loss of the power of voluntary motion affecting certain parts.

SECTION I.

DISTINCTION OF SPECIES, WITH GENERAL OBSERVATIONS.

PROFESSOR HOFFMAN distinguished palsy into,

1. *Hemiplegia*, affecting one side.
2. *Particularis*, affecting some muscles only.

He made another distinction of little importance to the practitioner, dividing palsy into *vera* and *spuria*; the former attended by loss of sense and motion, the latter by loss of motion only.

Atrophy, and diminution of vital heat in the limb affected, are also sometimes attendant symptoms.

Senac,

Senac, as quoted by Van Swieten, makes mention of a man, who had lost all power of motion in one arm, whilst the most exquisite sensibility remained in it; and was at the same time deprived of all sensation in the other, whilst the power of moving it was unimpaired.

In hemiplegia, the loss of sense and motion in one side is often attended by spasm and convulsive motion in the other; and, as the disease advances, the mental faculties, more especially the memory, are much impaired.

Hemiplegia and apoplexy have an intimate connection.

The latter commonly precedes; and when the former terminates in death, it is universally by the apoplectic stroke.

The near approach of *hemiplegia*, when it is not the consequence of apoplexy, is commonly announced by vertigo and coldness of the side.

In a partial palsy, it is usual for a sense of weight and numbness to precede the stroke, and the part affected becomes flaccid, cold to the touch, and sometimes, as before observed, atrophic.

When the lower extremities are rendered paralytic, it is not uncommon for the bowels to be torpid.

Palsy of the hands and arms is frequently a symptom of the *Colica Pictonum*, that is *Colic of Poitou*, or *Rachialgia Metallica* of Sauvage.

SECTION II.

OF THE CAUSES REMOTE AND PROXIMATE OF
PALSY.

THE proximate cause of palsy is, interruption of the nervous influence, which may be either by solution of continuity in the nerve of the part affected, or by compression either on the nerve or on the brain; and it is suggested by Professor Hoffman, that in the *paralysis spuria* the interruption is partial, but that in the *vera* it is total.

When treating of apoplexy, we took notice of two species, the sanguine and the serous. The same distinction will be needful in cases of palsy; because, the *hemiplegia sanguinea* and *hemiplegia serosa* have the remote causes different, and require different indications to effect a cure.

Hemiplegia sanguinea acknowledges the same causes, predisposing and occasional, as the apoplexia sanguinea, to which I must refer the student.

The persons most subject to this are, such as are of a sanguine temperament with a relaxed and irritable fibre.

The predisposing cause is debility, and the occasional may be strong stimuli and spasmodic affections,

fections, causing a determination of blood, as in apoplexy, to the vessels of the brain.

Hemiplegia serosa attacks those chiefly who have a relaxed fibre and abound with serum, which is, therefore, easily separated from the blood; and those also in whom serous evacuations have been unseasonably stopped or a salivation checked.

In such patients the pulse is weak and languid, the face is pale, and drowsiness with torpor mark its near approach.

It is most frequent in autumn and winter.

A partial palsy may arise from an affection of the spinal marrow, from its fracture or luxation, or from any mechanical compression.

Of this, *paraplegia*, or the palsy of the lower extremities, may stand as an example.

Palsy is sometimes relieved spontaneously by fever or by diarrhœa.

SECTION III.

INDICATIONS OF CURE IN PALSY.

THE indications of cure must be taken generally from apoplexy, whether sanguine or serous, with this reserve, that even in the *sanguine hemiplegia* bleeding, if not adopted early, must be omitted, for this reason,

son,

son, that the sanguine from distention without rupture becomes ferous.

In all cases of inveterate palsy the powerful evacuants must be avoided, and gentle tonics with astringents must be given in their stead.

The bowels, however, must be kept soluble by mild and moderate cathartics, or by carminative clysters, as in the sanguine apoplexy.

The following medicines have been useful.

℞ Test. Ostreor. ppt. Antimon. Calcinat.

Cort. Eleuther. $\bar{a}\bar{a}$ dr. 2.

Ol. Cinnam. gtt. 8. M. f. Pulv.

c. dr. $\frac{1}{2}$ alternis diebus. h. s.

That is,

Take testaceous powder, calx of antimony, and cascarrilla bark, of each two drams ; oil of cinnamon eight drops. Mix ; and take half a dram every other night going to rest.

℞ Tinct. Lavand. un. 4.

Ol. essent. Lavand.

———— Nucis Moschat, $\bar{a}\bar{a}$ dr. 2.

Axung. porcin. un. 2.

Aq. Ammon. un $\frac{1}{2}$. M. f. Ung.

quo inungantur spina dorsi & pedis planta.

That is,

Take compound spirit of lavender four ounces ; essential oils of lavender and nutmeg, of each two drams ; hog's-lard two ounces ; spirit of hartshorn half an ounce. Make an ointment for the back bone and sole of the foot affected.

It has been usual in palsy to try every kind of stimulus, externally and internally applied, such as cantharides, horse-radish, mustard, garlic, spirit of hartshorn, guaiacum, aromatics, frictions, cold bathing, and hot bathing.

One stimulating power has, however, indubitable evidence in its favour, and comes to us recommended by the most eminent practitioners. That is,

Electricity moderately applied, and long persisted in.

Let the student before he has recourse to it inscribe *festina lente* on his machine; for small shocks invigorate, while strong ones exhaust the vital energy and debilitate the system.

Emetics and also cathartics, such as senecka, aloes, scammony, calomel, and jalap, have been likewise recommended; and these, in certain species of palsy, such as the *rachialgica*, *biliosa*, and *serosa*, of Sauvage, may have been attended with success; but in this practice the sagacious physician will be guided by his own observations on the case before him.

Of late the *arnica montana* has acquired much reputation in the cure of palsies, and from its sensible qualities, from its penetrating, bitter, aromatic, taste, with some degree of astringency, it promises to be a useful medicine.

Since the year 1773 Drs. Stoll and Collins, of Vienna, have had repeated trials of its tonic power;

and the latter is said to have cured twenty-eight cases of palsy by giving, either one dram of the extract, or from two drams to half an ounce of the flowers, infused in boiling water, every day.

In the south of Spain I found it highly spoken of by the most successful practitioners.

The practice of Dr. Marryot was in some measure peculiar to himself; yet he was remarkable for curing, although not skilful in describing, the several species of disease submitted to his care.

He gave in all cases of palsy dry vomits, of blue vitriol and tartarized antimony; and after these cathartics, of calomel with ginger.

He ordered blisters, and gave internally a teaspoonful of tincture of cantharides, with twenty drops of the tincture of muriated iron, twice a day; or sometimes steel filings five grains, with, either the same quantity of aloes, or a scruple of Peruvian bark, twice a day: and he recommended his patients to go into the cold bath every morning.

He caused the spine to be well rubbed with oil of amber twice a day.

The first part of this practice was certainly proper in *paralysis serosa*; but the cold bath, unless rendered temperate, could be proper only for convalescents.

In such cases, therefore, the practice of Dr. Vaughan, of Leicester, is much more judicious.

He orders,

R. Sal. Vol. scr. 2. Elect. Cardiac, scr. 1.
 Cantharid. gr. 2. M. f. Bol.
 omni 3 horâ fumend. superbibendo Infus. Raph.
 Ruft. Sinapi. Valerian, & Canel. Alb.

That is, .

Take fal volatile two scruples ; cardiac electuary one scruple ; cantharides two grains. Make a bolus, to be swallowed every three hours, with some infusions of horfe-radish, mustard, valerian, and canella.

He applies blisters to the head and the sacrum ; and he anoints the spine with a liniment of spirit of fal ammoniac and quick lime.

After these medicines, to convalescents, he orders aromatics, bark and steel, with cold bathing.

In all cases of palsy, continued rest of the affected muscles must be carefully avoided, because when brought into action they will acquire strength by exercise.

This should be moderate, regular, and long continued.

Should the patient be obliged to sit, he may yet easily contrive to exercise both his hands and feet.

For this purpose, he will require only two pulleys fastened in the cieling of his room, at the distance of fifteen inches from each other, with a rope, passing over them, long enough to reach two treadles on the floor, and two bell handles, fastened at

a proper height, on the depending ropes. By means of this machine, even a paralytic may, in the most distressing circumstances, contrive to exercise both hands and feet.

SECTION IV.

CASES OF PALSY.

IN my Compendium of Nosology I have introduced a species, hitherto unnoticed by nosologists, and have called it *Verminosa*.

I met with it some years since in a lady resident at Bath, who had consulted many of the faculty without the least relief.

SHE was at that time under the care of Dr. Marryot, with whom I corresponded on this subject.

Not satisfied with knowing merely the nature of the affection, I was anxious to ascertain what had been the occasional cause ; and after a vast variety of questions, to all of which she answered in the negative, observing the upper lip much swelled, I asked her if she had any itching in her nose ? if she started in her sleep ? whether she was apt to grind her teeth ? whether she had noises in her head, a gnawing pain in her stomach, with a fickle appetite, costiveness, and more especially a foul breath in the morning. To all these questions she answered in the affirmative.

Having

Having thus discovered that she had *worms*, and observing that she was of an irritable habit, I had little doubt remaining as to the cause of this disease.

I ordered anthelmintics, such as calomel and rhubarb, which brought from her a great number of worms, many of which were more than six inches long. And in the course of a few weeks every paralytic symptom vanished.

It is a satisfaction to find that other practitioners have had similar experience.

And I am pleased to see, in the Medical Communications of Dr. Duncan, that a Dr. Allix, of Frankfort, had, in a case of the same nature, cured the palsy by the use of anthelmintics.

I have already referred the student to Sauvage for *apoplexia verminosa*, and he is sufficiently aware that apoplexy produces palsy.

Hoffman, in his inestimable works, has left us many cases of paralytic affection submitted to his care and cured by him.

Among these the most remarkable are,

I.—A MAN aged 40, with a red and bloated countenance, whose pulse was both full and frequent, even after many copious bleedings, and plentiful evacuations by carminatives, clysters, and cathartics of manna and nitre.

This patient was soon cured of *hemiplegia* by these evacuations, followed by Seltzer water, ether, nitre, tepid pediluvium, and strict temperance.

II.—A MAN aged 60, of a sanguine temperament, sedentary and plethoric, after having had a slight apoplexy,

which was cured by bleeding, and by spirit of hartshorn with antimony and castor ; this man had a *palsy* which was immediately and effectually relieved by bleeding only.

III.—A MAN aged 47, of a sanguine temperament, but of a relaxed fibre and debilitated habit, being, from stoppage of habitual perspiration, seized with a perfect *hemiplegia*, affecting the eye, the ear, half his tongue, and all the muscles, and even the pulse, of the right side, was cured by warm bath with antispasmodics which restored the perspiration.

IV.—A WOMAN aged 30, of a sanguine temperament, subject to hæmoptysis and hysteria, and frequently attacked by apoplexy after either frights or fits of anger, having her menses stopped by terror, was seized with *hemiplegia* of the right side.

She was cured, after venesection, by bathing in a chalybeate spring, which strengthened her pulse, increased the vital heat, and promoted perspiration.

V.—A WOMAN aged 50 and plethoric, after a stoppage of the hæmorrhoidal flux, being seized with palsy, was cured by warm pediluvium, bleeding in the foot, and moderate cathartics of rhubarb, nitre, and salt of tartar, exhibited three times a week.

VI.—A MAN aged 30 had palsy, induced by the colic of Poitou and attended by costiveness.

He was cured by oily fomentations, oil of almonds with cordial stimulants taken internally, and oily clysters.

The Professor mentions two cases which proved fatal.

The first was of a young man in high health and vigour, who, from the sudden influence of *terror*, was seized instantly with *pariplegia*, which, at the end of two years, proved mortal.

The other was of a man aged 58, of a sanguineo-melancholic temperament, costive, irascible, and thence subject to jaundice, who, by a violent fit of coughing, after a crumb of bread had passed into the *aspera arteria*, was seized with *hemiplegia* of the left side, attended by vomiting and convulsions of the right arm.

Lethargy supervened, and in one week he died.

Class II. NEUROSES.

Order II. ADYNAMIÆ.

A DIMINUTION of involuntary motion in either the vital or natural functions.

In this order we have three genera :

Syncope, Dyspepsia, Hypochondriasis.

Genus XXXVIII. *Syncope.*

Fainting.

THE symptoms are, the respiration and action of the heart, either cease or become much weaker than usual, with paleness of the countenance, coldness of the extremities, and a cold sweat usually about the temples.

SECTION I.

OF THE PROXIMATE AND REMOTE CAUSES OF
SYNCOPE.

THE proximate cause of syncope is evidently, extreme weakness, or total cessation of action in the heart.

The predisposing cause is, generally speaking, debility and morbid irritability; for persons of an irritable fibre are most liable to syncope, and irritability we know is increased by debility.

The occasional causes are numerous, and require a particular arrangement, that the several species may be properly distinguished.

SECTION II.

OF THE DISTINCTION OF SPECIES IN SYNCOPE.

THE species may be called,

1. Cardiaca. 2. Cerebralis. 3. Pulmonica.

1. *Syncope cardiaca*, arising from organic affection of the heart.

It

It returns without any manifest cause, attended at intervals by violent palpitation of the heart.

It is incurable. Of this Dr. Monsey, Dr. Wathen, and Mr. John Hunter, died.

2. *Syncope cereбрalis*, arising from diminished energy in the sensorium induced by,

a. Passions of the mind, such as horror, anger, joy, terror.

b. Deficiency of blood in the vessels of the brain, as in hæmorrhage; and after tapping, or long standing.

c. Flatulence in the stomach, worms, the stimulus of the gastric juice when the stomach is void of food, or perhaps inanition itself, and poisons.

d. Extreme pain, either exhausting the powers of life, or rendering the heart and arteries inirritable by the almost infinitely weaker stimulus of the blood. I have already stated that the muscles of a frog, immediately after decollation, are not susceptible of irritation; but in ten minutes after this, on pricking the toes, the legs, and thighs, and whole body, are violently moved.

e. Sudden cessation of violent pain, as after parturition, or the reduction of a painful dislocation.

f. An

f. An effort of nature to produce eruptions, or the menstrual flux.

g. Excessive evacuations, fatigue after hard labour or protracted watchfulness, and fevers attended by debility.

h. Heat.

i. Offensive smells.

3. *Syncope pulmonea* or *asphyxia*, arising from deficiency of action in the lungs, which is induced by,

a. Drowning.

b. Strangling.

c. Suffocation.

This species of syncope was considered by Dr. Cullen as an apoplexy ; but the symptoms and the proximate cause of this affection restore it to its proper place.

Dr. Goodwyn very properly calls it melanæma, and defines it “ *impedita sanguinis venosi in arteriosum conversio, cujus signa syncope & livor corporis.*”

SECTION III.

OF THE TREATMENT OF SYNCOPE CEREBRALIS.

IN the fainting fit little need be done to excite the motion of the heart; because,

1. Rest or cessation of action has a natural tendency to accumulate irritability.

2. The chyle and lymph by the peristaltic motion of the bowels continue to flow into the subclavian vein and cavæ, whilst the venous blood, by the contraction of the arteries, is transmitted incessantly through the venæ cavæ to the right auricle and ventricle of the heart, which it stimulates to action.

Hence it is observed, that the right auricle and ventricle contract and dilate alternately for near half an hour after respiration ceases, and those of the left for more than twice as long.

3. The stimulus of blood in the right ventricle of the heart excites, by consent of parts, the expansion of the lungs.

To hasten the recovery it is expedient to admit, not a blast of wind, which might be injurious, but
merely

merely fresh air, which of itself is usually sufficient for the purpose.

This, however will be rendered more efficacious by blending with it *oxygen air*, by sprinkling vinegar on the face, and by small electric shocks passed through the chest, to excite the action of the heart.

In case of syncope from loss of blood, no stimulants should be applied; because syncope is itself the most effectual remedy for hæmorrhage, and stimulants will, by exciting equally the nervous and arterial systems, increase the hæmorrhage.

Hysterical patients, who faint frequently even at the smell of the sweetest flower, require only to be left quiet till they recover of themselves; for we must always remember, "*quo levioribus causis & morbis, animi deliquia succedunt, eo minus alunt periculi.*"

Some practitioners have absurdly used the lancet, even in cases of debility, in which the vital energy has been exhausted by fatigue.

When our soldiers in America, after having been exposed during a march to fervent heat, were fainting, many were bled and died.

For immediate relief after the fit, if the syncope arose from passions of the mind, give wine or Hoffman's anodyne with some aromatic, such as a few drops of essential oil, either of mace or cinnamon.

Supposing it to have been induced by any acrimony in the alimentary canal, demulcents, anodynes, and correctors of the peculiar acrimony, must be combined together.

To prevent a relapse attention should be had to the predisposing and to the occasional causes of this affection.

The latter must be avoided, and to obviate the former we must have recourse to tonics and astringents, to strengthen the habit and to brace the fibre.

One case of syncope, calling for speedy and powerful exertions, has hitherto escaped unnoticed, and proved fatal to many recovering from *Small-pox* and *Typhus*.

When the danger from fever has been over, and the patient has been raised in bed, or has risen before his strength has been sufficiently restored, the blood has suddenly deserted the superior regions of the body, and the miserable object has unexpectedly expired.

The same event from the same cause has been observed in consumptive patients.

In such cases brandy should be conveyed into the stomach, and, without loss of time, the lungs should be inflated with *vital air*.

The same conduct should be pursued when parturient women, and when hydrophic patients on being tapped, have suddenly expired.

It is very remarkable, that even hydrocele, if considerable, when evacuated, has produced faintness, syncope, and death; as it is reported to have happened in the case of Mr. Gibbon the historian.

SECTION IV.

OF THE TREATMENT OF SYNCOPE PULMONEA.

WHILST the foetus continues in the womb, the mother decomposes the *oxygen air* in the blood by means of the *placenta*, and supplies the vital heat. But no sooner is the little infant introduced into the world, than new arrangements are required; the foramen ovale closes; the lungs expand, and, attracting the *vital air*, supply at once the needful *oxygen* and *heat*, to stimulate the heart and to maintain the circulation of the blood.

But when, by either drowning, strangling, or by suffocation, this stimulus is wanting, a total cessation of action in the heart ensues, producing syncope, which, unless relieved, will terminate in death.

In this our first attention must be, to inflate the lungs and to *oxygenate* the blood.

Rabbits, mice, and Guinea pigs, have been confined alternately in *azotic air* and *vital air*.

In the *former* respiration has been suspended, and the animals have been to all appearance dead; but no sooner have they been exposed to the action of *vital air*, than they have discovered signs of life.

The inflation of the lungs may be easily effected, in the case of still-born infants, by blowing the breath forcibly into the mouth whilst their nostrils are
I closed;

closed; and, in all cases above specified, with an instrument contrived by Dr. Curry, a young physician of distinguished merit, or, for want of this, the nozzle of a common bellows must be passed up one nostril, the mouth with the other nostril being closed, and the tongue previously pulled forward or pressed down to open the epiglottis.

Should this practice fail, bronchotomy must be performed; and, by dividing the two arytenoid cartilages, a passage must be made for the air into the lungs.

When *oxygenated air*, or, in defect of this, when atmospheric air, has been received into the lungs, every means should be attempted to stir up the vital embers.

The arterial system should be roused to action by electricity, passing gentle shocks through the chest in the direction of the heart, whilst the lungs are inflated and before they have collapsed again. At the same time moderate heat should be applied to the surface of the body.

I say *moderate heat*, because strong heat would suddenly exhaust the powers of life.

A dormouse at the approach of winter sleeps. But if, in the spring, he be suddenly exposed to the same degree of temperature, as that which induced torpor in the autumn, animation is destroyed.

Thus precisely is it with the vegetable tribes, for they sleep in winter, and are awakened by the vernal sun;

fun ; but die if too powerful heat be suddenly applied.

On this principle we may account for the destruction of plants by blight in summer ; for unless there be frost at night there is no blight ; and it may be remarked, that the blight does not take place during the action of the frost, but at the rising of a cloudless sun.

Hence it is that our garden crops, such as French beans and peas, which usually suffer most by blight after a frosty night in summer, suffer no injury if they are watered immediately before the rising of the sun, because the evaporation carries off the heat.

When the heart has once been made to receive the *florid blood*, it will be stimulated to new action, and the vital functions with the vital heat will be restored.

It will not, however, be sufficient to stimulate the heart and lungs, we must at the same time stimulate *the stomach*.

This may be effected by wine conveyed through Dr. *Monro's* flexible tube into that vital organ.

Clearly to comprehend the purpose of these operations, the student should be well acquainted with the discoveries of the modern chemists.

I have said that wine must be conveyed into the stomach ; but he should not be satisfied with being guided merely by the hand, without understanding

the reason why such an application is attended with success.

In the use of medicines he must endeavour to ascertain their mode of operation; for while the rash empiric wanders in the dark, the cautious and rational practitioner will be anxious to investigate the path of nature, and to account for her proceedings before he ventures to prescribe.

I shall attempt therefore to throw some light upon a subject which is *new*, and therefore little understood.

It is well known that in nature's laboratory, the vine, *wine* is composed of three ingredients, alcohol, water, and carbone; and that on the proportion of the former depends the strength or weakness of the wine.

Alcohol being highly combustible, it will be proper to observe, that in this, *combustion* is nothing but the combination, or chemical union, of *hydrogen* with *oxygen*, from which results a third substance, *water*; whilst the *heat*, which was in combination with the oxygen, escapes.

Alcohol itself contains some oxygen, but, by combustion, it takes still more from the atmospheric air: and thus by experience it is found, that sixteen ounces of alcohol, by combustion, produce eighteen ounces of water.

PILATRE DE ROZIER has frequently amused his friends by inhaling a large quantity of *hydrogen air*, which may be taken into the lungs without fear of injury,

injury, and then, applying his mouth to a tube; he blew out the air unmixed with atmospheric air, and fired it at the end of a tube, so that he appeared to breathe flame.

By this operation *water* was produced, which ascended in the form of vapour.

This *hydrogen air* he obtained from steam and heated iron.

In order to give a distinct idea of the quantity of *heat* arising from the combination of *hydrogen air*, I shall only mention, that one pound of this melted 295 pounds of ice, whereas in similar circumstances a wax taper, weighing one pound, melted only 133.

These observations I have presented to the student, in order to give him a clear and distinct idea of the substances which I have had occasion to mention; and by which he will see the strong affinity and chemical attraction between *hydrogen* and *oxygen*, the latter of which, as I have stated, is by the *lungs* derived from the atmosphere, whilst the former is conveyed into the system by the assistance of the *stomach*, and is most readily obtained from alcohol and wine.

So much for what has been discovered by the chemist with his retorts.

But it is time that we should return to the living retort, and consider by what laws the proportions are established between the *oxygen*, to be derived by inspiration from the atmosphere, and the *hydrogen*, to be conveyed into the system by the action of the stomach.

In the Case of Bilious Autumnal Fever the student may remember having met with this remark, "*The attentive observer will take notice, that there is a certain proportion between the vital air received into the lungs and the quantity of food which can be digested in the stomach.*"

When I made that observation, I was not aware that the same had occurred to any one before me. But I have now the pleasure to see, that the same had occurred to Dr. THORNTON, as appears in his Thesis, and to Dr. BEDDOES, as is seen in his letter to Dr. Darwin.

He had been breathing air of a much higher temperature than the ordinary standard, such as contained almost equal parts of oxygen, and azotic, air.

"HIS SPIRITS WERE ELATED; HIS APPETITE WAS GOOD; AND HE EAT ONE THIRD OR ONE FOURTH MORE THAN BEFORE, WITHOUT FEELING HIS STOMACH LOADED."

It appears, however, that he pushed his experiment too far, and that he induced, by this quantity of *oxygen air*, symptoms of a fever.

Yet by the assistance of a diet, in which sweet oil, butter, and cream, bore a large proportion to the other articles, he soon recovered health.

The student must remember in the first place, that oil and butter contain no other substances than *carbone* and *hydrogen*, substances which have a strong affinity and chemical attraction to *oxygen*; and in the
second

second place, from what, in the former part of this work, I have suggested on respiration and digestion, that in proportion to the quantity of food received into the stomach if it abounds with *hydrogen*, the system covets *oxygen*, taking up a greater quantity of it by respiration from the atmospheric air, and ultimately expels them both combined in the form of *vapour*, when they have served the purpose for which they had been received.

This balance is also beautifully illustrated by the experience of my friend Dr. THORNTON.

Mr. —, Member for —, laboured under so dreadful an irritability of the stomach, or perhaps frequent spasm of that and the adjacent parts, that upon eating, he was almost constantly seized with vomiting, and latterly it became so frequent, that nothing would stay on his stomach.

In this distressing moment, Dr. THORNTON was sent for. The *oxygen gas*, with a certain portion of *atmospheric air*, was inhaled, and the balance being made on the side of *oxygen*, Dr. THORNTON requested his patient to take some sustenance, which he had not done for many hours. Mr. — refused it at first, as he was certain it would bring on him a renewal of his distress. But being persuaded by Dr. THORNTON and his apothecary, Mr. WOOD, to make the trial, he was pleasantly surprised on suddenly experiencing the power of a *new remedy*, and he declared he was convinced, from the experience he had of different medicines, that no other means could have produced the same effect. He continued free from sickness as often as the *oxygen air* in a diluted form was administered.

We now see clearly the reason why Dr. THORNTON has been so successful in many other *dyspeptic cases*.

From these premises I trust it will be clear, why, in cases of *asphyxia*, we must not be contented merely with conveying *vital air* into the lungs, but at the same time *hydrogen* into the stomach, which powerfully attracts this substance so essential to vitality.

Bleeding has been recommended, but as the congestion is in the right auricle and ventricle of the heart, till the respiration is restored, venesection can give no relief.

Besides tension and tone being intimately connected, a diminution of the former would induce a similar diminution of the latter.

As therefore the stimulus bears proportion to the distention of the vessels, it would not be advisable to lessen the quantity of blood at the time when we wish to increase the excitement of the heat.

Frictions, as a powerful stimulus, may be advantageously employed when the circulation begins to be restored. For this purpose a hare's skin is best; but if only flannel is at hand, some kind of oil, well mixed with half the quantity of camphor, will be proper, to promote the general intention and to prevent the abrasion of the skin.

Genus XXXIX. *Dyspepsia.**Indigestion.*

THE symptoms are, want of appetite ; nausea ; vomiting ; flatulence ; heart-burn ; pain in the stomach ; costiveness.

These are the common symptoms, of which the most remarkable, as being always present, is a disposition to flatulence. But as to want of appetite, it is so far from being present in all cases, that I have known many dyspeptic patients who, perhaps from the distention of their stomach and the stimulus of acedcent fordes, have had a voracious appetite, and have indulged it without restraint.

SECTION I.OF THE CAUSES PROXIMATE AND REMOTE OF
DYSPEPSIA.

THE proximate cause of this disease is certainly, relaxation in the muscular fibres of the stomach, in consequence of which viscid mucus is collected, and the quantity of gastric juice is diminished.

As to the predisposing cause, it is evidently a debilitated fibre, for persons of that description are most subject to dyspepsia.

The occasional causes of this disease are, indolence, intemperance in every shape, passions of the mind, intense application, unseasonable hours of repose, vitiated air and heat in crowded assemblies, hæmorrhage and excessive evacuations, the abuse of tea, and, as the most common source of this complaint, exposure to cold fogs. This may be evidently seen in Holland and in the fenny parts of England.

I have observed the same disease prevailing in the northern parts of Spain, which are exposed to cold and damp; but I never saw it in the south.

All these causes tend to create and to increase debility.

SECTION II.

OF THE INDICATIONS OF CURE IN DYSPEPSIA.

FROM what has been said the indications of cure will readily present themselves.

These are, in the first place, to cleanse the stomach and the alimentary canal from viscid mucus, that you may act upon the living fibre.

The second is, to give tonics and *astringents*, such as the bark and steel.

These intentions may be carried on together.

℞ Pil. ex aloë c. Myrrh. scr. 4.

Kermes Mineral, dr. $\frac{1}{2}$.

Limat. ferri, dr. 1.

Syr. f. q. s. f. Pill. 32.

c. c. 2 bis die.

That is,

Take Rufus's Pill four scruples; Kerme's Mineral half a dram; filings of iron one dram; syrup a sufficient quantity to make 32 pills, of which take two twice a day.

Yet all the medicines, that can be administered, will be unequal to the cure unless the mind be tranquil, and unless attention be given to avoid all the occasional causes of debility.

The dyspeptic patient must rise early, must be for ever in the open air, must use cold bathing, and must shun the crowd.

He must be persuaded that a horse is the best physician, and that temperance of every kind, with reasonable dissipation and exercise in a dry healthy air, will do more for him than all the medicines in the world.

I remember, about thirty years ago, I had a friend, who was a hard student, buried among his
books

books in a room of small dimensions for fourteen hours in the day.

This was sufficient to create disease; but, in addition to this, he had an hæmorrhage, and lost many pounds of blood within the space of four and twenty hours.

Dyspepsia followed, such as I never witnessed in any patient, either before or since.

His flatulence was so great for three hours every day, after he had eat his dinner, that by this circumstance, independent of natural inclination and contracted habit, he was compelled to live alone.

From this disposition to flatulence, he was obliged to give up wine and all fermented liquors, with fat and butter, to abstain from vegetables, from tea, from sugar, and almost from bread.

He lived entirely on meats roasted almost to a chip, and toasted bread; whilst for liquids he was confined to brandy and water only.

Notwithstanding this degree of abstinence, the distressing flatulence continued, as long as he confined himself to his books and to his study, which was for two years complete.

He applied to many physicians, but in vain, till Dr. Whytt advised him to take three grains of James's Powder every night, five grains of rhubarb every morning, and *tonics* with *astringents* in the middle of the day.

℞ Cinchonæ, un. 4.

Gentian,

Cort Aurant, āā dr. 12.

Sp. Vin. Gal. ℥ 4. digere per 6 dies.

Capt. dr. 4 ad dr. 6 meridiæ.

That is,

Take Peruvian bark four ounces ; gentian and orange-peel, one ounce and an half ; brandy two quarts ; digest six days in a sand bath, and take half an ounce or six drams in the middle of the day.

It happened at the same time, that this gentleman had a favourite spaniel, who was always at his side. This faithful animal, who should have been ranging in the woods, being thus confined, was afflicted with a more deplorable disease, being troubled exceedingly with flatulence and *borborigmi*, from wind always in motion and grumbling through the colon.

With these symptoms of dyspepsia, poor Rover, for that was his name, from being sprightly, became remarkable for languor, want of energy, and depression of spirits. He was evidently jealous and suspicious, insomuch that, if any one called him by his name and spoke kindly to him, he lifted up his eyes, then dropped his eye-lids, and slunk away to hide himself.

Happily at this period, some friends decoyed our student from his books, prevailed on him to get
on

on horseback, to accept of greyhounds, and to go early to the field.

Rover followed with reluctance, but by degrees they both contracted a fondness for the sport.

The consequences were, such as might have been readily supposed, and were expected by his friends.

A long separation took place between our student and his books, and escaping thus from the occasional causes of debility, whilst he enjoyed the diversions of the field, with fresh air and exercise on horseback, he lost every symptom of disease; and his faithful *Rover*, participating in the same diversions, without the assistance of other tonics or astringents, regained his energy and spirits, no longer depressed by flatulence and depression of spirits.

If the student will recollect, what has been already said upon digestion, he will easily understand that a greater quantity of food being collected in the stomach, than can be quickly operated on by a diminished gastric juice, must ferment and produce that flatulence, which would not have subsisted without either such a deficiency in the solvent, or such superabundance of matter, to be digested and reduced to unfermenting fæces and to chyle.

He will likewise recollect, that the food is not always retained in the stomach till it is submitted to the action of that powerful solvent which nature has provided; but that part of it escapes through the pylorus,

pylorus, and, fermenting through the whole extent of the alimentary canal, there also produces distention.

Hence it must be clear that dyspeptic patients should eat frequently, and so much only at a time as they can digest it without flatulence.

It may be observed that, in my Compendium of Nosology, under *dyspepsia* we have many symptomatic species, which are to be relieved by curing the primary disease.

But as these likewise chiefly depend upon debility, the indications will be the same for both.

Genus XL. *Hypochondriasis.*

Low Spirits.

THE symptoms are, dyspepsia, languor, and want of energy; dejection of mind and apprehension of evil, more especially respecting health, without sufficient cause; costiveness, and a melancholic temperament.

SECTION I.

OF THE MELANCHOLIC TEMPERAMENT.

DR. CULLEN has very properly observed in his *Materia Medica*, that *temperament* depends on the state of the simple solids, the state of the fluids, their proportions, the distribution of the fluids, and the state of the nervous power as to sensibility, irritability, and strength.

The strength of the nervous power, or, as I would rather choose to call it, of the *vital energy*, may be distinguished by the quantum of power, which can be exerted in a given time, and the permanence of that exertion.

In the *melancholic temperament*, the hair is hard, black, curled; the complexion dark; the eyes black; habit meagre; strength considerable.

The mind is slow, grave, cautious, with little sensibility or irritability, but steady and inclined to obstinacy, rather disposed to sadness than to joy.

The simple solids firm and dense; blood rich; gluten abundant; heart torpid, but strong; venous blood more abundant than the arterial; the fibre not very irritable, nor soon exhausted of its vital energy; not disposed to spasm nor to involuntary
action,

action, by consent or sympathy with other distant fibres.

The sensations are not vivid, and the disposition is little inclined to pleasure.

The judgment is strong and capable of permanent exertion.

For the contrast of this temperament I must refer the student to *Hysteria*.

SECTION II.

OF THE CAUSES PROXIMATE AND OCCASIONAL OF HYPOCHONDRIASIS.

THE proximate cause of this disease appears to be, torpor and deficiency of irritability, commonly attended by rigidity of fibre. It is rightly therefore classed under the order of *Adynamia*, a word derived from the Greek, implying want of power.

It is properly the disease of age, and carries with it some of the symptoms of decrepitude. The same want of excitement and of energy, the same timidity and distressful anxiety about futurity.

Although it is properly the disease of age, yet, from accidental causes, it is sometimes premature,
and

and when it is once established, without the aid of medicine it goes on constantly increasing.

The occasional causes, according to Professor Hoffman, are,

1. Cold and humidity, with coarse diet of difficult digestion, as may be particularly remarked in the fenny parts of Lincolnshire, but more especially in Friesland, where the poor seldom taste wheaten bread, but live principally on the legumina and milk.

2. Indolence and inactivity with close application, as in the studious.

3. Anxiety and protracted grief.

4. Previous diseases, and particularly intermittent fevers, when removed by powerful astringents, without cleansing the intestines.

Dr. Whytt mentions six occasional causes of hypochondriac disorders :

1. Wind. 2. A tough phlegm. 3. Worms in the stomach and bowels. 4. Aliments improper in their quantity or quality. 5. Schirrous or other obstructions in the viscera of the lower belly. 6. Violent affections of the mind.

These

These eminent professors, equally distinguished for the extensiveness of their practice, and the acuteness of their observations, will, between them, enable us to complete the pathology of this disease. The four occasional causes noticed by HOFFMAN induce relaxation and debility in the alimentary canal, where he places the seat of the complaint; hence *tough phlegm* accumulates, producing worms and flatulence, with costiveness and all the symptoms of hypochondriasis, in the manner pointed out by Dr. WHYTT. For he most judiciously remarks, “when much phlegm is collected in the stomach and intestines, their nerves are rendered less sensible of the stimulus of the aliments, their absorbent vessels are partly obstructed, and the gastric and intestinal lymph are more sparingly secreted, or at least become more viscid.”

If the student recollects, what has been delivered in the former part of this work on the digestive process, he will readily understand, why the diminution or depravation of the gastric juice produces flatulence: and in Dr. Whytt’s incomparable Treatise on Nervous Disorders he will find, that tough phlegm in the alimentary canal has in some circumstances a stimulant, in others a sedative, effect.

From multiplied observations I have been long since persuaded, that hypochondriac torpor originates in viscid mucus, and I have lately been confirmed in this idea by seeing a patient of the melancholic tem-

perament, whose pulse, at the age of about fifty-six, beat only from 45 to 50 in a minute.

The physician, who attended him, did me the honor to acquaint me with the circumstance already mentioned, and informed me, that, neither by steel, nor by the most powerful cordial stimulants, could he excite the system, or increase either the pulsation of the artery or the vital heat.

I suggested the idea, that the reason why he could not excite the system was, that in the intestines there was something *interposed* between his medicines and the animated fibre. He was pleased with the idea, and determined to cleanse the alimentary canal from viscid mucus; but before he could adopt this plan the patient died.

Having an opportunity to talk with his apothecary, I discovered that this gentleman had long been subject to hypochondriasis and to asthma, that he had been almost in the daily habit of taking squill vomits, which always brought off from his stomach, and frequently procured by stool, a quantity of tough and viscid phlegm, and that prior to his last attack of asthma, the complaint for which he consulted his physician, he had for a considerable time omitted his emetics.

The most distressing case I ever met with of this disease, was in the parish of St. Agnes in Cornwall.

THE patient was near seventy years of age. With every
of hypochondriasis, she had confined herself
wholly

wholly to the house, and mostly to her bed, for twenty years.

This miserable object, having heard that I had been so fortunate as to relieve some patients, requested often that I would visit her. At length I went. I found her in a miserable cottage, situated in the midst of a bleak and barren heath; confined to a wretched bed, in a kind of cock-loft, with scarcely light enough to make her visible. When I drew near I saw her sitting up in bed, but though she wished to see me, she had not energy enough to lift up her eyes, and direct them towards the place where I was standing.

When I asked her any question, she was long before she answered, and every word seemed to come reluctant from her lips.

The same torpor having extended to her bowels, I found her costive, and, from defect of irritability in the arterial system, her pulse was feeble, languid, and only forty in a minute. The case was desperate, and no medicine gave relief.

There seems to be a particular *consent of parts* between the LUNGS and the whole of the ALIMENTARY CANAL.

I have already noticed this consent, as far as relates to the stomach and the lungs in respiration and digestion, but I must here be permitted to remark, that *hypocondriasis*, in which disease I have ventured to suggest a viscid mucus as lining the intestines, may be to this circumstance indebted for universal torpor and depression of spirits, for the feeble

and the languid pulse, and for the want of vital heat.

My reason for such a supposition is simply, that, as far as my observation goes, no sooner are the bowels, by a judicious treatment, freed from viscid mucus, than the vital heat returns, the pulse acquires increasing frequency and strength, torpor is removed, and the spirits rise to their accustomed level.

If to such patients we administer the substances which abound with hydrogen, and therefore make the blood powerfully attract the *vital air*, all their symptoms are relieved; or, if we make them inspire air enriched or supersaturated, if I may so express it, with *oxygen gas*, it has the same effect; a genial warmth is diffused over the whole system, the pulse is raised, and the spirits are revived.

Pure atmospheric air, supersaturated with *vital air*, has been proved, by the experiments of Mr. ARCHARD, of *Berlin*, and the extensive practice of Dr. THORNTON, of London, to be such a *powerful exciting tonic*, that patients, from the most distressing anxiety and gloom, have, by inspiring this, been rendered, in a short space of time, serene and cheerful; their appetite has been restored, and their digestion quickened.

The last time I was in town I saw a patient of this cast recover very surprisingly under the care of Dr. THORNTON.

Mr. RUSSEL, an engraver, who lives in Constitution Row, Gray's-Inn-lane, had been many years in so desponding a state, that latterly he could not even bear the innocent
mirth

mirth of his numerous family. He was nearly incapacitated from his employment, and as he had tried bark, steel, and other tonic medicines, without benefit, he entertained but little expectation of recovery.

He had a cough in the morning, was of a costive habit, had frequent and violent head-achs, and passed for the most part restless nights, or, when he slept, he was troubled with frightful dreams. Being emaciated and looking very fallow, he was conceived by every one to be in a deep decline.

Dr. THORNTON, with that propriety which pervades his whole practice, gave him first an emetic, then a gentle cathartic, and after that he united all the tonic powers to recover him ; as, the inhalation of oxygen air, diluted with a portion of atmospheric air ; bark, with a tincture of the same ; and columbo root ; a more generous diet ; exercise ; and the amusement of company. He cautioned him, for the easy passage of food (as the motion of the stomach is from left to right) always to lie on his right side.

He gave him occasionally an emetic or cathartic, and, under such judicious treatment, he was in a very short time restored to apparent health.

The use of the *oxygen air* was then left off, but this charming stimulus was found so essential to his recovery, that his food immediately sat heavy on his stomach, and his appetite failed him, and his spirits flagged, though he continued all the other tonic remedies. He had recourse, therefore, again to the inhalation of a *fartitious atmosphere*, and the same benefits accrued to him as before.

In about six weeks, after several relapses, and as often instantly recovered by breathing the *vital air*, he was finally restored, and has since continued in the enjoyment of perfect health.

SECTION III.

OF THE INDICATIONS OF CURE IN HYPOCHONDRIASIS.

IF I am right in the ideas I entertain of this disease, the indications of cure must be,

1. *To cleanse the alimentary canal from viscid mucus.*
2. *To administer tonics with the stimulant astringents.*
3. *To join with these, the inhalation of vital air mixed with atmospheric.*

These indications coincide with those of Hoffman and Dr. Whytt, and, in some measure, with those of Dr. Cullen.

The first intention may be answered by,

a. Emetics.

These may be given frequently without fear of increasing debility.

They remove a depressing load, open the pores, and, by general concussion, tend to remove obstructions in the minuter vessels.

R Pulv. Ipec. gr. 8.

Antimon. tartarifat. gr. 2. M.

That

That is,

Take ipecacuanha eight grains, tartarized antimony two grains.

Or any of the formulæ in my Compendium except the last may be adopted.

b. Cathartics.

These may be rhubarb with soluble tartar or magnesia, of each about ten grains; or a small quantity of aloes may be admissible, combined with asafoetida, or with gum guaiacum, to be taken every night.

℞ Rhei. Kali tartarifat. $\bar{a}\bar{a}$ gr. 10. M.
h. f. f.

℞ Pil. ex. Aloë cum Myrrhâ, gr. 15. ad scr. 1.
h. f. f.

℞ Pulv. Aloët. é guaiac. gr. 15. ad scr. 1.
h. f. f.

In cases where the bowels have been more than commonly torpid, I have given to advantage from three to eight grains of calomel at night, to be carried off in the morning by the following :

℞ Infus. Sennæ tartarifat. un. 2.
Kali tartarifat. gr. 12.
Rhei, gr. 8. M.
Mane sumend.

That is,

Take infusion of fenna two ounces, with soluble tartar twelve grains, and rhubarb eight grains. Mix.

The second intention may be answered by astringents, more especially steel filings, which are certainly preferable to Peruvian bark alone in torpid habits.

The myrrh and steel are recommended by Dr. Griffith; and, as already particularly mentioned in phthisis, may be given to advantage.

Or,

℞ Cort. Angustur. un. 1.

Ferri tartarifat. dr. 2.

Pulv. Myrrh. compos. dr. 6.

Zinzib dr. 4.

Syr. Cort. Aurant. q. s. f. Elect.

M. N. M. bis die sumend.

That is,

Take angustura bark one ounce; tartarized iron two drams; compound powder of myrrh six drams; ginger half an ounce; syrup of orange-peel sufficient to make an electuary. Take of this the size of a nutmeg twice a day.

Or any of the formulæ 77, 78. 80. 82, 83. of my Compendium may be used.

Dr. Marryot was accustomed to combine the tonics and cathartics with some antispasmodic in the same prescription; and I have found this, after hav-

ing

ing once cleaned the alimentary canal, to answer both intentions.

℞ Afæ fetid. dr. 1.

Aloë soc. Limat. ferri, āā scr. 2.

Syr. Zinzib. q. s. f. Pil. 24.

Capt. Pil. 2. mane & vespere.

That is,

Take asafœtida one dram ; focotrine aloes and steel filings, each two scruples ; syrup of ginger sufficient to make twenty-four pills, of which take two morning and evening.

The warm pediluvium is of service.

Regular exercise, change of scene, cheerful society, amusements, and constant yet agreeable occupation of the mind, are indispensable in the cure of this complaint.

All the occasional causes must be carefully avoided, but more especially *solicitude*, which can be effectually banished from the mind only by that confidence which Christianity inspires.

Class II. NEUROSES.

Order III. SPASMI.

A morbid motion or contraction of muscular fibres.

SECTION I.

OF IRRITABILITY.

MOTION, as far as we are acquainted with the laws of the creation, appears to be produced by four several causes, *attraction, repulsion, irritation, and volition.*

Lifeless, inorganized matter is governed in all its motions by the laws of attraction or repulsion.

Vegetables are subject chiefly to the laws of irritation.

Animals are equally with vegetables subject to the laws of irritation; but, rising above the vegetable tribes, we see them endued with a superior power, that of voluntary motion.

It is of motion, as caused by *irritation*, I am now to treat ; and in the prosecution of this subject, let us begin with the motion of the sap in plants.

If the student will consult that incomparable work, the Vegetable Statics of the Rev. Doctor STEPHEN HALES, chap. iii. he will be convinced, that the rising of the sap in plants is not produced either by rarefaction of the external air, or by capillary attraction, as was formerly imagined, but by *irritation* from the stimulus of light and heat, increased perhaps by the motion of the sap itself as it ascends.

The Doctor tried his experiments chiefly on the vine, by cementing to its mutilated stump glass tubes, each seven feet long and a quarter of an inch diameter, with brass caps, by which they were screwed on one above another, till they rose to the height of six and thirty feet.

At other times he used inflected tubes, each with columns of mercury to be put in motion by the ascending sap.

In the former, the sap ran over : in the latter, the mercurial gage stood at 38 inches, which he reckoned equal to the pressure of more than 43 feet of water.

To one thriving branch, in a prime bleeding season, he fixed tubes to the height of 25 feet, and in two hours the sap flowed over.

By these gages it appeared 1st, that the sap began visibly to rise March 10, when the thermometer by day stood only at three degrees above the freezing point ;

point; 2dly, that April 18 it was at its height and vigour; 3dly, that from that time to May 5, the force gradually decreased; 4thly, that it constantly rose fastest from sun-rise to about 9 or 10 in the morning, and then, unless the day was cloudy, gradually subsided till about 5 or 6 o'clock in the afternoon, after which it slowly rose again: but on a cool and cloudy day it subsided only from about 12 o'clock to 2 in the afternoon.

If in the morning, while the sap was rising, and a cold wind blew, the sun was clouded, the sap would immediately begin to sink at the rate of an inch per minute, but when the sun shone out, it rose again. Moisture and warmth made the sap most vigorous, more especially after cold weather, causing it to rise all day, although slowest about noon.

It rose likewise sooner in the morning after cool weather, than after hot days.

In the beginning or middle of the season, if warm weather had made the sap flow vigorously, that vigour would be immediately much abated by cold easterly winds.

When the tube was fixed to a very short stump of a vine, without any lateral branches, and at only seven inches from the ground; the sap flowed incessantly and fastest of all in the greatest heat of the day, sinking only after sun-set.

The further the tubes were fixed from the root, for instance on the extremity of a branch, at the distance of 44 feet 3 inches, the higher the sap was raised

raised and the longer it continued to flow, perfectly agreeable to a common observation, that in wall-trees the most distant branches draw hardest and receive most nourishment.

The oldest branches were soonest affected by a change of temperature, and in them the sap first began to sink.

July 4, whilst in one vine, which was planted in a pot, sap was rising, and a considerable quantity was daily pressing through the stem, to supply the evaporation from its leaves, which amounted to many ounces in the day; another vine, being cut off within three inches of the ground, was so far from emitting sap, that it imbibed water from the tube at the rate of one foot per hour; thereby demonstrating, that the sap in the former vine rose by the stimulus of light and heat, and not by trusion from the root.

When the sap was flowing with the greatest vigour, the stems did not dilate, as they evidently do by rain, which enters by the perspiring pores.

This makes it clear, that the sap passes through its proper vessels, and that it is confined by these.

From all these observations and experiments is it not clear?

1. *That the stimulating powers are light and heat.*

2. *That the irritability of plants is greatest in the spring and least in autumn; and that being accumulated during the night, it is exhausted, in some measure, before the middle of the day.*

By various experiments of Dr. Hale's, compared with those of Dr. Ingenhouze, it is evident, that vegetables in summer, whilst they enjoy the sun, are incessantly decomposing water, and emitting from their leaves its oxygen, combined with caloric, in the form of *vital air*. And it is clear, that as long as water is supplied abundantly, they not only preserve their vigour, even at mid-day with the most fervent heat, as in the south of Spain, but make a rapid progress in their growth, and emit a proportionable quantity of vital air. May we not infer from thence, that their *irritability* depends on *oxygen* and *heat*, and their *vital energy* on a plentiful supply of these reviving elements, whilst the *hydrogen* of the water not only supplies the combustible part of vegetables, but, by depositing its *caloric*, maintains the vital heat?

That the motion of the sap depends on *irritation* will be still more evident, if we consider the effect produced by insects; for wherever they have deposited their eggs, the part begins to swell.

This I have particularly remarked at Alicant, in the *quercus coccifera*. It was evident likewise some years since in Cornwall to a great extent in the barley, and to an alarming degree in America, where the wheat, in some districts of the middle provinces, was totally destroyed for several years, by having the eggs of insects lodged in the stems.

This effect may be particularly noticed in the gall nuts, growing on the oak; and at the present mo-

ment I have a striking example of it in my garden, where several branches of sweet-briar have bunches, of from one to three inches in diameter, solid within, excepting the small chambers, in each of which is a little maggot, but externally covered, as it were, by moss.

That insects *irritate* the plant, on which they fix, is clear ; because in a green-house, when the lice, as they are called, are numerous on the leaves, the irritability is soon exhausted, and the plant quickly dies.

In such circumstances, when I have washed my greens with a strong infusion of bear's foot (*Helleborus fœtidus*), the lice have been destroyed, and the plants have speedily recovered.

Vegetables have various motions, which evidently depend on their irritability, and the stimulus of light and heat.

To this must be attributed the motion

1. Of the branches, when they stretch toward the light.

2. Of the whole flower, when it follows the motion of the sun.

3. Of the petals, when they close, either, as the *hibiscus*, at mid-day, or as others before the setting of the sun.

4. Of the leaves, when like the *bedysarum* gyrate, they turn their upper surface to the sun.

Some

Some parts of the flowers have peculiar motions, designed to propagate the species, when either the stigma inclines towards the stamina, or the stamina embrace the stigma, which is more fully explained in Dr. DARWIN's Loves of the Plants, and in Dr. THORNTON's magnificent explanation of the Sexual System of Linneus.

This operation once performed, the stamina, exhausted of irritability, immediately begin to droop and die, precisely as the male locust, and indeed the males of most insects die the instant they have impregnated the female.

Many plants are said to move their stamina, on their being punctured with a pin even when they are separated from the flower.

Other motions, evidently caused by stimuli, prove the irritability of plants in which those motions are observed.

Such every one has noticed in the several species of *mimosa* or sensitive plants, in the *overrhoa* carambola, the *onoclea* sensibilis, and the *oxalis* sensitive, but more especially in the *dionæa* muscipula, or venus fly-trap.

Should Drs. Girtaner, Gahagen, and Thornton, pursue the experiments they have successfully begun, or should other philosophers, with the same ardour of inquiry, take up this subject, we shall then be able to ascertain a fact, asserted by the former, that the plants called sensitive may be deprived of their sensibility by opium and alcohol, whilst vinegar and
the

the oxids of arsenic or mercury, communicate irritability to plants, which did not possess it before.

Were this fact well ascertained, it would throw great light upon the operation of these medicines in the human frame, and contribute to establish the system, now received by many respecting *irritability* as induced by *oxygen*.

The *irritability of the animal fibre* is observed particularly in the heart and arteries; in the lungs, in the stomach and intestines, in the absorbents, and in the secretory glands.

These perform the functions most essential to vitality, which being therefore incessantly needful, whether we sleep or wake, are produced, not by sensation and volition, but, for the best reasons, by *irritation* only.

Some fibres, as for instance those of the sphincter muscles, are usually under the dominion of the will; yet when strongly irritated, these likewise assert their independence.

It has been well remarked by Dr. BROWN and his disciples, that the irritability of the fibre may be in a state of *tone*, in a state of *accumulation*, or in a state of *exhaustion*, and all our observations seem to confirm this part of their system.

The absence of stimulating powers, produces accumulation of irritability; whilst the frequent and too powerful operation of stimuli tends to exhaust it.

Tone is the proper medium between accumulation and exhaustion.

When a muscle is stimulated, it does not commonly remain in a contracted state, although the stimulus continue; but, unless in case of spasm, is alternately contracted and released; or, as Dr. Cullen was accustomed to express himself, is alternately in a state of *excitement* and of *collapse*; because the vital energy, even when strongest in the animated fibre, is speedily exhausted by exertion, and requires a given time for the arrival of a fresh supply.

Hence tremor is most observable in cases of debility.

Violent exertion is found to quicken the respiration and the pulse.

These circumstances, when combined with others, tend in some measure to confirm the opinion of Dr. GIRTANER, that *oxygen is the principle of irritability*, as *irritability is the principle of life*.

Certain it is, as Dr. Fowler, after having carefully and repeatedly examined the effects produced by tying the crural artery, and dividing the sciatic nerve, has judiciously observed, that the sanguiferous system contributes more immediately than the brain to the support of that condition of muscles and of nerves, on which depend all the phænomena of contraction in the animated fibre.

Did the supply of vital energy, after violent exertion, depend merely on the nerves, it would not require

quire time for its arrival, because the nervous influence moves as quick as thought.

There was long since a dispute between Dr. Whytt and Baron Haller, respecting irritability, and that dispute is not yet completely settled:

The former attributed this power wholly to the nerves; the latter to the muscular fibre, independent of the nerves.

This discordance of opinion must, I fear, remain till some one is able with the point of the finest needle, to touch a muscular fibre, without wounding at the same time a nerve.

But were we permitted in this case to reason by analogy, we might suspect, if not conclude, that since *plants* by irritability alone, without brain or nerves, exercise the vital functions; these likewise may in animals depend on the irritability of the muscular fibre, whilst sensation, thought, and voluntary motion undoubtedly result from the presence of a brain.

What has been remarked respecting the action of a single muscle, is applicable to separate parts of the system and to the whole.

Thus during the operation of an emetic, the stomach is alternately in a state of excitement and repose. And thus the most violent pains and labour of a parturient woman, if not effectual for the expulsion of the offspring, cease for a time and are then renewed.

Thus likewise all the appetites are liable to fits, returning however after cessation at stated periods; if it be hunger, at the distance of some hours; if it be an appetite, not designed for self-preservation, it may return either at the returning season of the year, or at a less distant period, according to the nature of the animal, and the irritability either naturally accumulated and excited, or morbidly induced.

The necessity of sleep arises from exhaustion, and is designed in the absence of all superfluous stimuli to renew the vital energy for the various purposes of life.

It is remarkable, that during sleep, not only the breathing and the pulse are slow and full, but the feeling is rendered dull: murmurs make no impression on the ear; gentle cathartics remain all night inactive in the bowels, and coughing is allayed.

From what has been said it will appear, that the irritability of the system is never in a permanent condition, but incessantly ebbing and flowing like the tide; constantly in motion, like the pendulum in its vibrations, or rather bearing resemblance to the Leyden phial, when it is alternately charging, discharging, and discharged.

Exhaustion prepares the system for fresh accumulation, and this again, giving force to the most feeble stimuli, leads back to the exhausted state, as in the cold and hot stages of intermittent fevers, or as in melancholia alternating with mania.

I have ventured to suggest a possibility that irritability may reside in the simple fibre, as in the vegetable

table tribes, but I am perfectly satisfied, that without nervous communication there can be no consent of parts.

This subject is exceedingly abstruse, and the ideas of the best physiologists are not so clear and distinct, so complete and comprehensive, as we could wish: but as Dr. BEDDOES has judiciously observed, “ we
 “ *should set a proper value on our present knowledge, al-*
 “ *though it be imperfect, and restrain those rude hands,*
 “ *that are ever ready to pluck up the tender plants of*
 “ *science, because they do not bear ripe fruit at a season,*
 “ *when they can be only putting forth their blossoms.*”

SECTION II.

OF STIMULI.

1. Whatever has a tendency to preserve or to destroy the animal œconomy is stimulant.

Thus pleasure and pain; desire and aversion; hope and fear; hunger, thirst, and nutriment, equally stimulate the system.

2. Whatever has a tendency, either simply to destroy the structure of the irritable fibre, to dissipate that which is essential to its action, or to form a separate combination with any of its elements, is stimulant.

Thus attrition, puncture, distention, cold, heat, ether, alcohol, the concentrated acids, caustic alkali, electricity, and muscular exertion, stimulate the system in general, and more especially the part to which they are immediately applied.

3. Substances which are stimulant to one organ may be indifferent to another.

Light stimulates the eye, but not the ear. Sound stimulates the ear, but not the eye. A single drop of water irritates the trachea and excites convulsive motions, but, unless in hydrophobia, passes quietly by the œsophagus.

From what has been delivered in this work we may understand, why alcohol, musk, volatile alkali, æther, and opium (the diffusible stimuli of Dr. BROWN), act as such, yet very differently according to the quantity in which they are exhibited.

But to comprehend their first operation we must observe, that the gastric juice, although it cannot dissolve, yet certainly it stimulates the living fibre, rapidly induces debility, and excites both vomiting and purging. When, by vomiting, it is rejected from the stomach these symptoms cease.

This fluid operates on all the diffusible stimuli above mentioned, but not with great rapidity, for those which have most hydrogen, such as æther, alcohol, and volatile alkali, are most active and expeditious in restoring the vital energy.

A LADY of an irritable fibre, some short time after vomiting, swallowed about half an ounce of lemonade, and was instantly seized with excruciating pain and spasmodic contractions of the stomach; but these symptoms were as instantly removed by less than half an ounce of brandy.

When small quantities of opium, alcohol, or of other substances containing hydrogen, are received into the stomach, their first operation is, to neutralize the gastric juice, and thereby to remove the irritation which it caused, in the same manner as an alkali would have neutralized an acid, or an acid would have removed the stimulus of a caustic alkali.

Besides combining with the gastric juice, the carbone and hydrogen of the substances in question attract oxygen, which they neutralize and form with it carbonic acid and water.

But, when superabundant and not neutralized, they stimulate the stomach and bowels to reject, to dilate, or to expel them, as injurious to the system, which requires a due proportion of its elements.

Agreeable to this observation we may remark of stimuli in general, that, when gentle and regular, they excite the containing vessels to their accustomed action for the purpose of nutrition. But, if they are violent, they either excite spasmodic action of the vessel, to exclude or to stop the progress of the offending matter; or they induce inverted motion,

to expel the enemy, and that by the shortest passage, as in the act of vomiting.

It is by the *inverted motion of the absorbents*, as Dr. SAUNDERS has beautifully stated in his Treatise on the Diseases of the Liver, that bile, in case of jaundice, is conveyed from the hepatic to the thoracic duct, and so diffused throughout the system.

SECTION III.

OF THE PREDISPONENT CAUSE OF SPASM,

PHYSICIANS have an axiom which Dr. Cullen frequently repeated to his pupils :

“DEBILITAS GIGNIT SPASMUM,”

This axiom, although not accurately true, is inestimable in the hands of the rational practitioner.

Debility is indeed the predisposing, but not the proximate, cause of *spasm*; and it is allowed, that the predisposition is not sufficient, without an occasional cause, to produce disease.

Nay, debility is only the predisposing cause of spasm as increasing *irritability*.

The connexion between the cause and its effect will be evident, if we either compare the debility
and

and irritability of infancy with the vigour and diminished irritability of the adult; or contrast the lax fibre and irritable disposition of the female with the tense fibre, robust habit, and more tardy disposition to excitement in the male.

In our infancy how readily do we pass to opposite extremes of hope and fear, how easily are we pleased, how soon displeased, and what a thin partition separates between laughter shaking both his sides, and grief overwhelmed with tears.

This irritability is not discovered merely in the mind; it affects the whole system, as must be evident to every one, who has had an opportunity of making observations upon children, or has even felt their pulse.

These observations have no claim to novelty; but I do not recollect, that on this subject it has been noticed, in pointing out the connexion between debility and irritability, that no sooner is a *Synocha* converted into *Typhus*, a disease of extreme debility, than *irritability* succeeds; the most patient become impatient of the least contradiction or delay; and, from the slightest causes, are with equal readiness excited, either to laugh or cry.

In this situation, when the *asthenic* diathesis has succeeded to the *sthenic*, the heart and arteries, as we have observed already, when treating of Typhus, have their *irritability* increased, which appears by counting the pulsations, now more numerous, whilst their debility is evident to the touch, and at the
same

same time the alimentary canal becomes more irritable to the operation of cathartics.

But that we may have more clear and distinct ideas upon this subject, let us take a view of the *sanguine temperament*, contrasted with the melancholic already given; both which are well described by Dr. Cullen in his *Materia Medica*.

The *sanguine temperament* has, hair soft, weak, and light coloured, verging towards red; skin smooth and white; complexion ruddy; eyes blue; habit soft, plump, inclined to fat, and disposed to sweat on exercise; strength moderate; the mind sensible, cheerful, unsteady; simple solids lax; red globules great in proportion to the serum; heart active and strong; blood in the arteries copious with respect to that of the veins; fluids abundant; nervous system sensible, irritable, changeable; the fibre disposed to spasm and to involuntary action, by consent and sympathy with distant fibres.

Persons of this constitution are more particularly liable to hæmorrhage, to inflammation, and to *hysteria*.

In this temperament, we should be at first disposed to think, that the vessels being distended mechanically by blood, this should stimulate the fibres to contract with vital energy, that the action and reaction would be great, the contractions strong, and that, so far from being liable to spasm, which is a symptom of debility, all would be activity and vigour.

This,

This, however, is not so in fact, for it is universally observed of this constitution, opposed to the *leucophlegmatic* where torpor is a prevailing symptom, that in proportion to the laxity of the simple solids, debility, irritability, and disposition to spasm, prevail.

In this constitution the relaxed fibre readily receives and quickly parts with vital energy, precisely as azote and hydrogen loosely, yet readily, combine with oxygen. Whereas the rigid fibre, more tenacious of its power, in this circumstance bears some resemblance to the base of muriatic acid, which adheres so strongly to its oxygen, unless in its super-saturated state, that no process has been yet discovered to make the separation.

The robust and elastic fibre comes between them both, and, like carbone, seems to be covetous of oxygen and to combine with it firmly, but not with obstinate tenacity.

The particular temperament will through life, in a degree, retain its influence. Yet, by advancing years, the sanguine tends incessantly towards the melancholic.

By poverty of living, by loss of blood, by exhausting diseases, by frequent use of the warm bath, and more especially by indolence and protracted sleep, this progress towards rigidity of fibre will not only be retarded, but the simple solids and the whole system will become morbidly relaxed.

A generous

A generous diet, with the assistance of bark, chalybeates, cold bathing, and cool air, will gradually restore the tone; but it is *exercise* which must distribute, impact, condense, accumulate, this energy in every part; for it is this alone which can effectually brace up the animated fibre and make it tenacious of vitality.

Every muscle by neglect of exercise grows flaccid, tender, and liable to be soon fatigued; but by constant exertion it is increased in size, its fibres are rendered every day more elastic and robust, and, in process of time, the weak may become patient of labour without the least fatigue.

It is not from the sleek and ruddy countenance, not from the plump habit, as indicating distended vessels, that we are to form our judgment of the strength, for Hippocrates has well observed,

“*Orium humectat, & corpus reddit debile; labor siccat & corpus robustum efficit.*”

To see, therefore, vigour in perfection, we must look at the hardy and laborious rustic, whose turgid muscles, as in the statue of the Farnesian Hercules, can be readily distinguished through the skin.

In fattening poultry, we feed them to the full, but we endeavour to keep them perfectly at rest. In consequence of this treatment the vessels are distended, but the fibres are relaxed, tender, and weak in their cohesion. To fatten our ducks, we not only confine them in a place of small dimensions, but
keep

keep them from the water, because we observe that their cold bath and exercise render the skin and all their fibres tough.

It may be received as an axiom, that *the living power or energy of an organ is in proportion to the quantity of arterial blood that circulates through it.* For it is not merely the quantity of fluids feebly creeping through the vessels, nor fat stagnant in every part of the system, but the quick succession and strong impulse of *well oxygenated blood* that produces tension, tone, and vigour.

This may be still more clearly comprehended, if we attend to the manner in which horses are fed and worked upon the road. When first taken up from grafs they abound with fat, but are not fit for labour, because, on moderate exertion, they are bathed in sweat, and soon exhausted by fatigue. If, when taken into work, they are stinted to five bushels of oats per month, which was formerly their allowance on the road, little work can be obtained from them. But, with sixteen bushels of oats besides beans, per month, and a small quantity of hay, if worked in proportion to their food, they know not what it is to feel fatigue. Their vessels, distended with *well oxygenated blood*, contract with vital energy, the action and reaction are great, all is activity, all is vigour.

Such are the post horses.

But where strength, rather than activity, is wanted, as for the carriers' waggon horses, the proportion

tion of beans is much increased, and that of hay is fourfold; for it is here that the maxim will hold good, *pondus addit robur*. Their motion is slow, but it is long continued.

From all that has been delivered the student will be, I trust, prepared to distinguish between *debility* as connected with *irritability* and the *debility* of *torpor*.

All stimuli, either violent or long continued, tend, as we have seen, to exhaust the vital energy, and to induce,

1. *Morbid irritability*, as in Typhus and Hysteria.
2. *Paralytic irritability and death*.

Hence it is that violent inflammation terminates in gangrene; and long life in *decrepitude*, which may be rendered premature by the reiterated abuse of stimuli.

We may observe two species of *torpor*; torpor with relaxation, and torpor with rigidity; the one relieved by tonics and mineral astringents, the other not admitting of relief.

In the leucophlegmatic, in *chlorosis*, and in *dropsy*, we have the debility of torpor; not attended by rigidity but by *relaxation*. The vessels of the lymphatic, not of the arterial, system are distended, and that not from vital energy but its defect, and the consequent relaxation of the tensile fibre.

In *hypochondriasis*, although not to the same degree, we observe the debility of torpor, not induced by the excess of stimuli, nor attended either by rigidity of fibre or by any remarkable relaxation of the lymphatics; but arising from the cause already mentioned, when I was treating of that disease.

In all these affections we distinguish a languid circulation and deficiency of heat.

It were needless to remind the student, that the debility, which is the predisponent cause of spasm, is not the debility of torpor, but debility as connected with irritability.

This then is the predisponent cause; but this alone will not produce disease.

It is acknowledged, that the retina is almost infinitely irritable; yet this irritability will never produce contraction of the iris without the stimulus of light, nor will the highest degree of irritability produce spasm without some irritating cause.

The first time I visited the New Forest in Hampshire, I thought my horse was frantic; he foamed, he fretted, he lashed himself with his tail, every muscle was convulsed, and he was bathed in sweat. The servant of my friend, who was present, watched his opportunity to remove *one little fly*, and all was calm, tranquillity was instantly restored.

Thus precisely is it in the human frame. In spasmodic affection arising from extreme debility, with its corresponding irritability as the predispo-

ment cause, you remove the little fly and the spasm ceases.

Should the student meet with spasm in the sthenic diathesis, as I have stated in the Case of the Biliary Autumnal Fever, he may be certain that it is not a little fly to be removed, but a wasp, a hornet, because in this constitution the irritating cause must be much stronger to produce even a slight spasmodic affection, than would be sufficient for the most violent, where irritability in the extreme prevails.

In the case, to which I have referred, we saw gastrodynia flatulenta, which was removed when the first passages were cleansed; and violent spasmodic stricture, in either the cæcum or in a flexure of the colon, which ceased as soon as those viscera were cleansed of accumulated scybala by repeated clysters.

Spasmodic affections are induced by,

1. *Local irritation.*

2. *Consent of parts.*

The first is wholly independent of the brain and spinal marrow; but the latter ceases when the communication with the origin of the nerves is interrupted.

1. As an instance of spasm induced by *local irritation*, without consent of parts, we may mention colic, in which scybala stimulate a portion of the colon

colon precisely, and with the same effect, as when calculi in the ureters, or sharp sand in the eye, stimulate the part with which they are in contact.

2. The *consent of parts* may be considered as either universal or particular.

When cold is suddenly applied to the surface of the body, all the irritable fibres appear to have one general consent. The alarm is universal; we feel a contraction of the skin, and the rapidly increased secretion of limpid urine proves, that the irritation and constriction reach to the kidneys; every part of the alimentary canal is instantly affected; the arterial system feels the momentary influence; the exhalants on the surface are drawn into consent; the absorbents are excited; and the greater the extent of surface exposed to the action of cold air or water, the more evident are these effects.

On this principle it is that partial application of cold stops the epistaxis or bleeding at the nose.

Mental stimuli are equally universal in their effect. In a state of health every passion of the mind is connected with some correspondent motions in the body, and exerts its influence, not merely on the heart, but on the whole arterial system, even on the most minute ramifications and the smallest vessels, to which the direct force of the heart does not extend. Hence shame is manifested by redness of the face; fear by paleness; anger alternately by both.

But the influence of the mind, when suffering by passion, is extended equally to the brain and to the nerves; hence it is that anger and fear produce universal tremor; and hence it is that various affections, passions, and apprehensions, of the mind produce disease and spasm; as we shall clearly see when we come to treat of the various genera included in this order.

From this universal consent it is, that opium applied to the extremities of the nerves, not only destroys irritability in the muscles to which it is immediately applied, but exerts its influence by sympathy on the origin of the nerves, destroying the vital energy of the brain, and rendering every animated fibre irritable even by the strongest stimuli.

Besides this general consent, we observe a special consent and sympathy between parts which are subservient to each other.

1. Between the lungs and all the muscles which assist in respiration.

2. Between these and the right ventricle of the heart, when it is stimulated by the returning blood.

3. Between the rectum and the uterus, and all the muscles which assist in the involuntary expulsion of either the fæces or the fœtus.

4. Between the stomach and all the muscles which assist in the convulsive act of vomiting.

5. Between

5. Between the nostrils and the lungs, as well as all the muscles which assist in respiration. For when stimuli irritate the nostrils, the lungs are instantly inflated to their full extent, and a strong involuntary blast is directed through the contracted passages to drive off the offending matter.

6. Between the stomach and the gall bladder, when charged with gall stones, which excites strong vomiting, to shake the cyst and to discharge the stones.

7. Between the *stomach* and the *lungs*, as I have already had frequent occasions to observe, particularly in speaking of digestion and of tussis stomachalis. The same will be noticed when I proceed to treat of asthma and of hooping-cough.

8. Between the pregnant womb and the breasts, to prepare nutriment for the new-born infant.

Some kinds of consent arise from vicinity, as when tenesmus and strangury excite each other.

Some are founded only in continuity, as when tenesmus produces vomiting.

Hence it is that tenesmus, in irritable habits, may be instantly relieved by spices, wine, and brandy, or even by food received into the stomach.

The consent of parts, which are subservient to each other, being founded in utility, may be termed salutary and well directed in opposition to other kinds

of consent, which, being either useless or deleterious, might with propriety be denominated frantic or capricious.

In these we can discover no appearance of design, and can scarcely therefore consider them as the efforts of nature to relieve herself. The common sensorium seems to be so disordered, that none but the wildest efforts are produced, in which commonly the weakest and most irritable part of the system is the first to suffer.

SECTION IV.

OF THE OCCASIONAL CAUSE OF SPASM.

WHEN we are seeking for the irritating cause, nature sometimes points by her efforts to the source of all her sufferings, and then we can scarcely fail to understand her meaning.

In all diseases, but more particularly in the spasmodic, our attention should be turned towards what are called the six *non-naturals*.

1. Air. 2. Food. 3. Motion. 4. Sleep.
5. Passions. 6. Things retained or discharged, for among these we shall find the occasional cause of the disease.

1. *Air.*

1. *Air*. I know not that any condition of the *air*, as such, will immediately produce a spasm; but certain it is, that *impure air*, such as we breathe in crowded assemblies, increases debility, and then, as Dr. Brown, and before him Dr. Whytt, judiciously remarked, when the body is debilitated, the ordinary stimuli, that in its healthy state invigorate it, produce irregular motions. Among these we may reckon the *heat* of the surrounding atmosphere, which, if suddenly increased, more especially supposing irritability to have been previously accumulated by its absence, that is by cold, proves a most powerful stimulus.

In warm climates, obstinate spasmodic affections are frequent; but these arise from debility, as the predisposing cause, induced by heat; and the occasional cause must commonly be sought for in some other stimulating power.

2. *Food*, if superabundant, morbidly affects the nerves of the stomach, which is itself the most irritable organ, and with which every other part of the system sympathizes. But, independent of the quantity, the quality of the food may prove a stimulant inducing spasm.

3. Of *motion* and *rest* I have already spoken; of rest as leading to debility, and of exercise as increasing strength.

But here it is proper to observe, that violent muscular exertion is a powerful stimulus, such as debilitated subjects cannot bear without inducing spasmodic affections.

4. *Wakefulness* tends to exhaust the vital energy, and to induce debility ; but in sleep, when no animal motion diminishes the rapidly increasing energy, accumulation must be the consequence. Yet even during sleep spasmodic affections are apt to intervene. The reason seems to be, that, although sensibility is blunted during sleep, irritability in some functions appears to be increased, as in the action of the absorbents, and the convulsive spasms arising from the stimulus of worms.

5. The *passions* have an amazing influence, as I have already stated, in the production of spasmodic affections.

Were I to attempt a new and universal arrangement of the diseases incident to man, I should feel myself inclined to unite in one system the *mental* and *corporeal*, between which there is a manifest connection.

As a clergyman I meet with moral diseases, which require the aid of a physician ; and, in the practice of medicine, I have frequently observed diseases of the body induced by morbid affections of the mind, in which therefore moral arguments combined with medicine are the most effectual remedies.

6. Things retained afford abundant cause for spasm.

a. *In the alimentary canal.*

These may be, indigested fordes, viscid mucus, worms, the gastric juice, or bile.

Professor Macbride, of Dublin, judiciously observes, that the most common source of disturbance in the nervous system is acrid and offensive matter, either in the stomach or flexure of the duodenum, of which the symptoms are, in the tongue foulness, fordes, and thick sloughs; in the mouth a taste, bitter, sour, rancid, putrid; nausea and loss of appetite; pain in the left orifice and upper part of the stomach; weight and oppression about the præcordia; fulness of the hypochondria; heaviness, giddiness, and pain in the head; shivering and coldness of the extremities; with lassitude and loss of strength.

Professor Hoffman speaks of acrid, bilious matter in the intestines as the cause of spasm.

Materia acris biliosa flatuum & spasmodorum generatrix. Tom. II. p. 199.

And Dr. Whytt, in his inestimable work on Nervous Disorders, has delivered his opinion, that *tough phlegm* and *worms* may be considered as their efficient causes.

b. *In the vascular system.*

Retention of any accustomed evacuations throws the whole system into confusion, and produces a great variety of spasmodic affections, more especially at the time when nature is making an effort to relieve herself. Hence it is, that we so often find those affections attendant on obstructed catamenia and the intermission of any hæmorrhage which is become habitual.

c. In the exhalants.

Eruptions of any kind, which are either tardy in their appearance, or which have been repelled, produce the same confusion in the system. Hence it is that children and persons of an irritable habit are apt to have convulsions or epileptic fits at the commencement of eruptive fever, and more especially prior to the appearance of small-pox and measles.

Perspiration checked has frequently the same effect.

d. In the gums.

When children are teething, they are liable to convulsions, unless the gum is cut as soon as it begins to swell, to assist in the protrusion of the tooth.

Dr. Whytt has left us many curious cases of spasmodic affections cured merely by some small natural evacuation of blood from a part whence it had never flowed before, or by a similar discharge of pus; by the appearance of either the catamenia

or the hæmorrhoidal flux ; by cutaneous eruption, and by the inflammation of the gout ; and every one knows, that, in children, as soon as the tooth comes forth convulsions cease.

Things discharged have not a tendency to spasm any otherwise than by inducing debility, in case the discharge, whether of blood or lymph, has been immoderate.

SECTION V.

OF THE INDICATIONS OF CURE IN SPASMODIC AFFECTIONS.

IN spasmodic affections the general indications may be, to relieve the spasm, if necessity requires it, by antispasmodics, such as, peppermint water, æther, opium, camphor, electricity ; but these must be considered as merely palliative.

The *second* is, to remove occasional causes, which, according to circumstances, may be by emetics, cathartics, emmenagogues, anthelmintics.

The *third* is, to obviate the predisposing cause, by tonics and astringents either vegetable or mineral, by a generous diet, by cold bathing and cool air, and more especially by temperance and exercise.

UNDER this order we have sixteen genera :

Raphania, Epilepsia, Convulsio, Chorea, Tetanus, Palpitatio, Dyspnæa, Asthma, Pertussis, Dysenteria, Colica, Cholera, Diarrhœa, Diabetes, Hysteria, Hydrophobia.

The five first affect the *animal functions*, the external senses. with the judgment, memory, and will.

The four following affect the *vital functions*, the respiration and the motion of the heart.

The seven last affect the *natural functions*, the digestion, with the appetites, secretions, and excretions.

Genus XLI. *Raphania.*

THE pathognomic symptoms are, spasmodic contractions of the joints, with convulsive motions and most violent pain, reverting periodically and continuing from ten days to three months.

SECTION I.

OF THE USUAL SYMPTOMS OF RAPHANIA.

IT begins with cold chills and lassitude, pain in the head, and anxiety about the præcordia.

These symptoms are followed by, spasmodic twitchings in the tendons of the fingers and of the feet discernible to the eye, heat, *fever*, stupor, delirium, sense of suffocation, aphony, and horrid convulsions of the limbs. After these, vomiting and diarrhœa come on with a discharge of *worms*.

About the eleventh or the twentieth day copious sweats succeed, or purple exanthemata, or tabes, or rigidity of all the joints.

SECTION II.OF THE OCCASIONAL CAUSE AND TREATMENT OF
RAPHANIA.

FOR the proper treatment of this disease I must refer the student to what I have said on fever and on spasm, with the most perfect confidence, that
7 the

the history here taken from Sauvage will receive light from what I have delivered on these two orders of disease, and that my indications in them will equally apply to this.

With this persuasion I have placed it as the connecting link between Pyrexia and Neuroses.

It must be evident that raphania originates in the *alimentary canal*, and I have not the least doubt that as, according to Sauvage, it is induced by the coarsest, the most clogging, and the most improper, food, so it might be speedily removed by emetics, followed by a generous diet with tonics and astringents.

Genus XLII. *Epilepsia*.

Epilepsy.

THE pathognomic symptoms are, convulsions with sleep.

SECTION I.

OF THE ATTENDANT SYMPTOMS.

THE usual attendant symptoms are, foam issuing from the mouth; respiration laborious, as in the act

of strangling; pulse at the commencement quick and small, but in the progress of the paroxysm languid and full.

The eyes are swollen and protuberant, constantly in motion, and turned up, so as to conceal the pupils; teeth grinding with such violence, as sometimes to split them; the jugular veins turgid; the tongue swollen and protruded.

The head is convulsed, and sometimes seized with *tetanus*, and either drawn forwards to the chest, or backwards to the spine, where it continues fixed and immoveable.

The thumbs are strongly rivetted within the palms.

All the muscles are, either convulsed to such a degree that four or five men can scarcely restrain their motion, or the whole body becomes rigid with *tetanus* like a marble statue.

The wind is heard rumbling through the bowels, and sometimes escapes by eructation.

A vomiting comes on; the feces are ejected with violence; and blood is sometimes evacuated both up and down, yet without rupture of the vessels.

The urine is at the same time forcibly emitted with the contents of the adjoining vesicles.

It sometimes comes on suddenly and without the least warning of its approach. But it is frequently preceded by some degree of lassitude; head-ach and heaviness; obtenebration; ringing in the ears; disturbed

turbed sleep; unusual timidity; palpitation of heart; respiration intercepted; coldness of the extremities; rumbling in the bowels, with offensive flatus; urine copious and limpid, agreeable to the axiom of Hippocrates:

“*Epilepticis, urinæ tenuēs & crudæ præter morem, sine repletionē, morbi invasionem significat.*”

In some patients the *epileptic aura* is perceived in the extremities, creeping, unless stopped by a tight ligature, towards the head, and, arriving there, it instantly produces the epileptic fit.

SECTION II.

OF THE INTERVALS AND EFFECTS PRODUCED BY EPILEPTIC FITS.

THE intervals between the fits are various, either annual, monthly, or diurnal.

The paroxysms sometimes return more than once in the space of four and twenty hours, commonly at the new and full of the moon, frequently at the quarters, but nearly about the same hour of the day. It is not, however, unusual for them to come on during the time of sleep.

Epileptic

Epileptic fits weaken the understanding, memory, and judgment; and, unless restrained, induce fatuity.

They often leave behind them mania, palsy, deafness, loss of sight, and at last terminate in the apoplectic stroke.

SECTION III.

OF THE PREDISPONENT CAUSE OF EPILEPSY.

THE persons most subject to epilepsy are, infants and children before the age of puberty, more especially females and such as are of a relaxed and therefore of a plethoric and irritable habit, but especially if descended from epileptic parents, or if the mother happened to be terrified during the time of pregnancy.

The indolent, and such as have been reduced by poverty, exhausted by hæmorrhage, or worn out by any species of drain or of intemperance, and such as in any way offer violence to nature, are among the first who suffer by this formidable disease.

The predisponent cause of epilepsy is, therefore, debility with sensibility and irritability, which Dr. Cullen well expresses by one word, *mobility*.

Yet

Yet I cannot agree with him and Dr. Home, that this wholly depends on a plethoric state of the system and general turgescence of the blood.

SECTION IV.

OF THE OCCASIONAL CAUSES OF EPILEPSY.

THE occasional causes are,

1. *Violent excitements of the brain.*

a. By the sensations of pain or pleasure.

b. By the passions of joy, anger, surprise, and terror.

Even a violent and sudden noise, or blaze of light, is sufficient to produce a fit; and what is very remarkable, children hanging at the breast, when their nurses are enraged or terrified, are liable to be attacked by this disease.

c. Muscular exertions.

2. *Irritation from*

a. Worms. These have sometimes made their way through the intestines into the cavity of the abdomen.

Van Swieten particularly mentions a child, two years old, who appeared to be healthy till he was seized with violent convulsions of which he died.

When opened, they discovered the duodenum pierced by a *lumbricus teres*, which was taken out alive.

b. Indigested fordes.

A PATIENT came to me, a lad of about 17 years of age, who had had two and twenty fits within the last fourteen days. He remarked, that about quarter of an hour before they came on, he had uneasy sensations in his stomach and began to yawn.

He had no appetite. He had been lately eating a great quantity of sloes, and had swallowed all the stones.

One dose of jalap stopped the fits, and he had no return.

The meconium remaining, and acidities collected in the stomach and intestines, are the common source of epilepsy in new-born infants.

c. Hunger, arising either from acidities or from the stimulus of the gastric juice.

Galen makes mention of a student, who, when fasting long, never failed to have an epileptic fit.

d. Opium and spirituous liquors, taken in such quantities as rapidly to expend the vital energy and produce intoxication.

e. Renal calculi. La Motte, in his Treatise of Surgery, makes mention of two epileptic patients,

in whom no occasional cause for this disease could be assigned, till one of them, after a violent paroxysm, having passed five calculi, had no return of the disorder; and in the other, after death, there was discovered a stone, weighing five drams, lodged in the pelvis of the right kidney.

Dr. Whytt observes, that epileptic fits have proceeded from a rough bone or cartilaginous substance irritating the nerves of the great toe or the calf of the leg.

f. Tittling. Van Swieten saw a young lady, who had no claim to epilepsy, yet for many years suffered by this disease, induced at first by tittling, whilst some of her companions pinned her down, and others amused themselves for a great length of time in tittling the soles of her feet.

g. Hæmorrhagic effort, whether directed towards the uterus, hæmorrhoidal vessels, the nose, or any other part, from which blood has been accustomed to proceed.

b. Exanthematic effort, more particularly in small-pox and measles.

i. Hepatic eruptions checked by repellent applications, as when the tinea or scald head in children, a running behind their ears, or any ulcer, is dried up by astringent applications.

k. Arthritic

k. Arthritic effort ; for it has been frequently observed, that the disposition to epilepsy has been instantly removed by the first attack of inflammatory gout, and has never more returned. See Van Swieten, Sect. 1075.

l. Cold suddenly applied. According to the Brunonian doctrine, this cannot be considered as a cause of epilepsy, any otherwise than as *accumulating irritability*, and the *subsequent heat* ought to have been assigned as the cause.

m. Heat, when excessive or succeeding to cold. Epilepsy has been called with great propriety *morbus comitialis*, for it has been constantly observed, that they who are disposed to this disease, are most liable to be attacked by it in crowded assemblies and in heated rooms.

n. Thunder ; for Van Swieten has well remarked :

“ *Plures epileptici instanti tonitru corripuntur paroxysmo.*”

o. Odours, such as, from peculiarity of constitution, disagree.

p. Imitation. I remember hearing Dr. Whytt relate, that a whole ward of young women became affected with epileptic fits, merely by the sight of

one epileptic patient; and I have more than once had occasion to observe, that epilepsy, like yawning and many other nervous tricks, is to be acquired by imitation.

g. Lively recollection, producing the same effect as the original impression.

Thus the young lady mentioned by Van Swieten fell into an epileptic fit, even when she saw her companions preparing to tittle others.

He tells likewise of a boy, who was so terrified by the unexpected attack of a great dog, that he fell down epileptic, both at the instant and whenever he either saw a great dog or even heard one bark.

We know what it is to shed tears at the recollection of some tender or distressing scene long since past, and the same degree of recollection will, in irritable habits, renew spasmodic motions which had ceased; as for instance, in the act of vomiting: and Van Swieten mentions a young man, who was seized with nausea and purging merely at the sight of the cup, in which he had repeatedly taken a cathartic.

r. Habit.

SECTION V.

OF HABITS.

I HAVE formerly remarked, when treating of intermittents, that nature is fond of habits.

The propensity to acquire habits and to act from them, when the original incentive has long since ceased, is peculiarly the property of animals.

This general law of the animal œconomy, although sometimes the source of evil, is productive of much good.

The generous steed, once set in motion, no longer needs the whip and spur, nor yet the curb, unless it be to make a change, and either to quicken or retard his motions. And the rider himself, if he has been accustomed to travel on one road, may wholly occupy his mind about a thousand speculations, or, with intensity of thought, pursue one continued series of ideas; and yet, although he may often change his direction, never wander from his way.

Innumerable actions, needful to the well being of the animal, are performed by *habit* without the least attention at the time.

Habits have respect to place.

All animals have their haunts and home bush.

Their first object of pursuit is food, and with regard to this they have all their haunts.

The sportsman knows where to look for the covey of partridges to-day, which yesterday he moved, whilst they were feeding in the stubble; and we have great reason to believe, that even birds of passage return annually to their accustomed spot.

The next object of pursuit to animals is some safe retreat, in which they may quietly repose, some hiding place, in which to sleep.

In the choice of a sequestered spot, it is accident which first determines them; but the choice once made, they habitually return to it, unless fear, or some motive, more powerful than habit, determines them to change it.

When they are to pass from their place of rest in search of food, the choice of a path is not a matter of indifference, but it is influenced by habit. If one of the same species has passed before them, they follow in his steps, and having once passed unmolested in this path they *tenaciously* adhere to it.

Hence it is, that on the open down you may distinctly trace the track of different tribes.

Hares have their track, with which the poacher is well acquainted, for it is here he fixes up his snare. Sheep and horses have each their peculiar track;

track; and it is well known that men will tread where men have trod before, insomuch that if a drunken clown makes a crooked path over a new-ploughed field, the next who follows will inadvertently trace his footsteps; and, having once passed by a given track, men habitually resort to it again.

I have frequently remarked the force of habit in large companies, who dine together at a public table, for every man, even without intending it, returns to the same seat he occupied the day before.

And in a farmer's stable, or in his shed, his horses and his cows pertinaciously retain each one its peculiar place; and should it be occupied by some impertinent intruder, this will be a sufficient subject of contention.

Dogs, in a peculiar manner, feel the force of habit respecting the spots they have fixed upon for their evacuations.

In their friendships animals are governed by the force of habit, for any two which meet accidentally, at a time and place distant from that in which they accidentally met before, are attached to each other, and, supposing them not to be restrained by some more powerful influence, will immediately become associates.

If two horses, strangers to each other, travel together to a fair, although they should have formed an acquaintance only for ten minutes, they will find each other out among a thousand others, and will quickly come together.

Habits have respect to time.

Whatever habits we have formed, with regard to the times of feeding, will have a powerful influence on the appetite for food.

The savage, who lives by hunting, may fast many days, and then feed voraciously, without suffering either by inanition or repletion: but they who, in civilized society, have acquired the habit of feeding five times every day, cannot pass one meal, nor without impatience wait five minutes beyond the usual time of eating.

In both, the appetite for food and the powers of digestion depend on habit.

In case of great mental excitement, men may continue many days without repose; but, if they have acquired the habit of sleeping at a certain hour and for a certain length of time, sleepiness at that hour will return, and at the accustomed hours they will awake from sleep.

Both the desire for sleep and the disposition to awake may, by habit, become as regular as the rising and the setting of the sun.

The same may be said of evacuations. I had a nurse for my children, who was so perfectly satisfied of this, that she governed all their motions by the clock, and in their earliest infancy taught them the vast influence of habit.

Every part of the system is under the influence of habit, and even the mind itself is not exempt from

from it. Hence, as Mr. Locke has taught us, arise association of ideas, associated actions, and association between actions and ideas.

Some associated motions are governed by the will, as in playing the violin or flute, and the arts of turning, of spinning, and of weaving. Others are occasionally under the guidance of the will; yet, in case of violent stimuli, they are not to be restrained, as happens sometimes in the expulsion of the fæces and the urine.

Motions are easily associated if they serve the purposes of life; but not if they go counter to natural combinations, as when the silver-smith, for the first time, attempts to inspire by his nostrils whilst he is blowing through his lips.

Yet by frequent repetition the habit is obtained, and the consent of parts is effectually established.

One combination is so perfectly unnatural, that no one has yet been able to describe at the same time two circles in opposite directions, one with his foot, the other with his hand.

Some associated motions, although at first either voluntary or accidental, become at last wholly independent of volition.

Thus it is, that by habit we acquire *tricks*.

Other associated motions are from the beginning independent of the will, such as the vital motions and those which are established by disease.

Of sympathy and consent of parts I have already treated, and have only here to add, that, agreeable
to

to a remark of Dr. Cullen, Sect. 1311. in proportion as the *habit* is established, a less degree of stimulus is needful to excite the system, and to induce associated efforts; whether to exclude the enemy, to arrest, or to expel him, supposing him to have gained admission, or those wild efforts and consent of parts, which seem to be altogether either frantic or capricious.

Before I quit this subject I must yet observe, that nature learns in a measure to provide for *habitual* drains, and usually feels burthened if these are intermitted.

This observation extends to hæmorrhages, whether artificial, natural, or morbid; to perspiration; to ulcers; and to every other kind of drain, as may be particularly remarked in France, where the natives acquire the habit of incessantly spitting out their saliva; in Spain, where a voluntary discharge of mucus from the fauces is both excessive and disgusting to the last degree; and in Holland, where spitting is induced by smoking; for none of them seem to suffer by such a constant drain.

This observation extends likewise to the local expenditure of vital energy, or of that, whatever it may be, on which vital energy depends, whether this pabulum be merely oxygen derived from the arterial blood, or the nervous fluid, whatever that may be, or both, as I am inclined to think, united.

SECTION VI.

OF THE PROXIMATE CAUSE OF EPILEPSY.

BOERHAAVE, as the proximate cause of epilepsy, assigns vehement action of the brain on the motory nerves, and total defect of action on the sentient nerves.

With this, the opinion of Hoffman substantially coincides, yet it is more methodically expressed, for he considers the proximate cause to be spasmodic stricture of the dura mater, compressing the sentient nerves, and causing a greater influx of the nervous fluid to the moving fibres.

Epilepsy appears to be nearly connected with apoplexy, more particularly with *apoplexia spasmodica* of Hoffman, and seems to admit of distinction into sanguine and serous.

The paroxysm seems to originate in spasm, but there is evidently, and perhaps induced by spasm, a determination of blood to the vessels of the head, with some degree of pressure on the brain, which may be from distended blood-vessels; or, the action of the exhalants being increased, there may be effusion on the brain; and during the state of coma this superabundant lymph may be taken up by the absorbents.

In case of rupture of the blood-vessels, apoplexy and death will close the scene.

Now, as the pressure on the brain is only partial, and the animal functions are alone suspended, the vital energy will be accumulated, and therefore act with increased vigour on the other functions, as we have remarked in the enumeration of the symptoms.

This substantially agrees with the pathology of the sagacious Hoffman, and with a curious experiment of Sauvage, when he induced epileptic spasm by wounding the medulla oblongata, and death by puncture of the spinal marrow.

SECTION VII.

INDICATIONS OF CURE IN EPILEPSY.

PRACTITIONERS in their treatment of this disease may be separated into three classes.

The *first* prescribe only *to the symptoms*.

Thus they commonly recommend carminatives, that is cordial stimulants, to discharge the flatulence of the stomach and bowels; ether, the foetid gums, and opium, to relieve the spasmodic affections of the moving fibre; magnesia, to absorb the acid; or salts and manna, to remove the costiveness.

The *second* seem to proceed one step farther, and prescribe *for the disease*.

They look into books, and being told that epilepsy is to be cured by such a medicine, they give it with confidence; but being disappointed in their expectations, they try some other *infallible specific*, governed entirely by chance, without one ray of light to guide their steps.

The *third* prescribe, if I may so express myself, neither to the symptom nor yet to the disease: they endeavour *to find out the proximate cause*; but neither are they contented with that investigation, for they never rest till they have made up their mind as to the *predisponent* and the *occasional causes* of the disease submitted to their care, and *on these* they establish their indications.

BOERHAAVE concludes his judicious remarks on epilepsy by pointing out the inutility of *specifics*: yet most of his contemporaries and too many of his followers have had no other dependance in the cure of most diseases.

Even HOFFMAN, in this respect, deserves our censure.

He agrees with Wiefmann and Dolæus in recommending a *specific* powder, to be composed of all the subsequent ingredients, earth, worms, frogs, moles, swallows, fresh feet and embryos of hares, ivory, stag's

stag's horn, human skull, blood of a healthy man with manatee stones, but above all the hoof of the elk.

The elk was chosen as being himself subject to epileptic fits ; and the hoof, because, when seized with epilepsy, he cured himself by putting his hoof up to his ear.

Etmuller very curiously observes, that the horn of the *elk*, by distillation, yields a volatile alkali which is antiepileptic !

But to render this efficacious for the human race, it was needful, that the hoof should be struck off by a *hatchet* whilst the animal was young and most at rut.

The manatee, or sea cow of warm climates, was fixed upon, as being friendly to the human race. See Schroder b. 5. d. 3. n. 77. & Rejes C. El. q. 45. n. 3.

As to the blood of a healthy man, this seems to have been a relic of Pagan superstition, for we learn from Celsus, that a common prescription for epileptic fits among the quacks was to make their patients drink the warm blood of a gladiator slain in combat.

We may remark, however, that with these specifics, the best instructed physicians were accustomed to combine cordial stimulants, antispasmodics, tonics, and the vegetable astringents, not, however, forgetting *oriental pearls*.

Professor

Professor HOFFMAN particularly states, that evacuates, temperants, and alteratives, must precede the use of *these specifics*.

His learned friend, Dr. NICOLAI, very properly observes, that the epilepsy of children, arising from acidities in the first passages, is effectually relieved by the *testaceous powder* contained in this ferrago; that nothing can be more idle than to seek an universal remedy for spasmodic affections, and that, to cure them effectually, the medicines must be adapted to the cause. After which, however, he exclaims,

“*Sed quam variæ sunt spasmi vel epilepsiæ causæ!*”

In epilepsy the indications must be taken from the *remote causes*, because during the paroxysm nothing can be done to give relief.

The indications then will be,

1. *To increase the vital energy.*
2. *To remove the morbid stimulants.*

To answer the first intention, we must recollect what has been delivered in the section on debility and spasm, and in conformity to those ideas, we must increase the tone by increasing the tension of the solids and the circulation of the fluids.

For this purpose we must adopt a generous diet, with cool air, exercise, and the most powerful
 8 astringents,

astringents, avoiding at the same time all causes of debility.

The cold bath, gradually increased in coldness, and the time of the immersion gradually increased from momentary to five minutes continuance, will be found an efficacious tonic.

Hippocrates observes of epileptics,

“*Si quartana supervenit, liberantur.*”

We cannot induce a quartan, but we can supply its place by the sudden application of cold, to be followed immediately by glowing heat, so as to induce a universal excitement of the system.

Dr. BROWN has well remarked, that the cause of epilepsy is neither plethora, nor plethora with mobility, but *debility*; and therefore he prohibits venesection. Yet, with submission to his superior talents, I must here suggest, what I hope has been already proved, that debility implies relaxation of the solids, which often induces plethora, and that this kind of plethora prevents the degree of circulation which is needful for the increase of tone.

If, therefore, the student should observe in his epileptic patient a tensive pain in the head, with inflamed eyes, but more especially with oppression on the pulse, let him not be afraid to use the lancet, yet, whilst the blood is flowing, let him put his finger upon some artery, that by its *feebleness* he may be warned to desist, or by its *increasing vigour* he may be encouraged to proceed. At the same time

time let him remember, that venesection, as Dr. BROWN has demonstrated, increases ultimately the evil it was intended to remove, and therefore let him not repeat this operation, but proceed to brace up the relaxed fibre, as the best preservative from such plethora.

Many eminent physicians, in the cure of epilepsy, have placed their whole dependance on metallic oxyds, and have particularly recommended zinc.

Some give either flores zinci, or the precipitate obtained from vitriolated zinc by alkali, beginning with one grain twice a day, and gradually increasing the quantity to twelve grains three times a day: but others prefer the zincum vitriolatum, increasing the dose from five to twelve grains twice a day.

Dr. Cullen frequently prescribed and strongly recommended *cuprum ammoniacum*, and many of his pupils have produced wonderful effects by giving a quarter of a grain to a dose, advancing gradually even to four grains twice a day.

Had they began by giving the largest doses, the stomach would have revolted, and by the force of habit, subsequent doses, although reduced in quantity, would have produced the same bad effect. But by proceeding gradually, the stomach may habitually be taught to bear the largest doses; the lacteals may be trained to take up these substances in great abundance; and then, being conveyed into the blood, they will circulate through the minutest

vessels of the system, to deposit perhaps their *oxygen* wherever it is wanted, but certainly, in whatever way it is accomplished, to increase the vital energy.

In my own practice I have been much attached to steel. This I learned from SYDENHAM, and having seen its wonderful effects, as administered by the late Dr. SMITH, of *Blackfriar's Bridge*, and by Dr. NANKIVELL, in *Cannon-street*, I have constantly adhered to it.

The best preparations are, the filings and the rust of iron, either of which I give from five to ten grains, two or three times a day, at stated hours, and sometimes I have united it with angustura bark.

℞ Cort. Angustur. un. 2.

Limat. ferri, dr. 4.

Pulv. Arom. dr. 1.

Syr. Zinzib. q. s. f. Elect.

℥. M. N. bis vel ter in die.

That is,

Take angustura bark two ounces; filings of iron half an ounce; aromatic spices one dram; syrup of ginger sufficient to make an electuary.

The dose may be a bit as big as a nutmeg twice or thrice a day.

I have lately found the bark of the English oak, combined with bitters and aromatics, abundantly useful as a tonic and astringent.

Dr.

Dr. Wilson, where tonics and astringents failed, has cured by giving camphor gr 5. increasing the dose gradually to thirty grains.

To answer *the second intention* will require the watchful attention of the patient.

He must learn to moderate his passions and enjoyments, equally avoiding all sudden and violent excitements both of pain and pleasure.

He must be temperate as to his eating and drinking, and in proportion to these he must regulate his exercise; yet cautiously abstaining from excessive muscular exertion.

It will likewise be needful for him to shun the extremes and sudden alterations of heat with cold, and to keep at a proper distance from those who are suffering by the same disease.

Hoffman gives a very interesting case of a young girl, aged 12, of a florid complexion, plethoric habit, and inclined to costiveness, who, being *terrified*, was seized with violent epileptic fits, but was cured by bleeding at the nose.

The cases of epilepsy, which in the country have been submitted to my care, have been principally induced by terror, by indigested foods in the stomach, or by worms.

Of the latter, one case gave me much perplexity, because I thought myself certain of the cause, yet

by no medicines could I either cure my patient or bring away the worms.

When I dismissed her, I suggested my opinion of the case, in which she acquiesced, and told me, that her sister had been for many years subject to the same complaint, but that, after having tried every kind of vermifuge, recommended by physicians, she had taken bear's foot (*helleborus foetidus*) in a considerable dose. At the distance of about two hours, after she had swallowed this, she had a fit, was violently convulsed for a considerable time, and was left for dead; but in about half an hour she revived, felt an inclination to evacuate her bowels, and, at one motion, passed seventy worms (*the teretes*) alive, some of them nine inches long, and all twined together in a round ball without the least admixture of faeces. The convulsions, I apprehend, were most violent whilst these worms were passing the pylorus.

From this time she never had an epileptic fit.

Viscid mucus with indigested sordes in the stomach and duodenum, have been stated as one occasional cause of epileptic fits, and Dr. Fothergill considered this to be their most usual cause.

When they originate from hence, nature sometimes makes an effort to relieve herself by vomiting.

Van Swieten makes mention of a young man, in whom the paroxysm ceased whenever this symptom supervened; and, as the fits constantly returned at the
full

full of the moon, he availed himself of this circumstance to prevent them by the timely interposition of an emetic.

Hoffman relates the case of a young lady, the daughter of an epileptic mother, who, having drank a great quantity of cold water during the operation of an emetic, which she had taken for a quartan ague, was seized with epilepsy, but soon relieved by drinking largely of warm water, which restored the vomiting, and cleansed the stomach; yet, after a time, the fits returned with increasing violence, but were again relieved chiefly by emetics and spontaneous vomiting.

The Professor on this case makes the following remark :

“ This affection originated altogether in the primæ viæ, occasioned by indigested fordes, acidity, viscid phlegm, and bile, either in the stomach or the duodenum. And these also produced the intermittent.”

Dr. Bondt, as we see in the Medical Commentaries of Dr. Duncan, mentions an epileptic patient, to whom he gave the bark of the *geoffræa surinamensis* in strong decoction, as a powerful *anthelmintic*.

This copiously evacuated a dense and viscid mucus both up and down, and, although it brought no worms to light, effectually cured the fits.

When the disease is occasioned by renal calculi, by obstructed catamenia, by the hæmorrhoidal flux

imprudently repelled, or by atonic gout, it must be considered as symptomatic, and the attention must be turned towards the primary disease.

Supposing it to have been induced by passions of the mind, by transient sensations, by irritation past, by thunder, by imitation, or by association of ideas, and to be supported, not by any forces in the system, but by the power of habit; in this case, our plan of cure must be founded principally on the first intention, more especially near the period of accession; that, by preventing the fit, we may disturb the habit and thus ultimately effect a cure.

For this purpose, the same practices recommended to break the habits of intermittents will here also frequently answer our intentions.

Previous to the fit bark, steel, wine, ether, opium, must be given with a liberal hand, so as to support the vital energy, taking care, at the same time, not by excess of stimulants to induce debility.

To direct his caution, let the student consult what has been recently delivered on stimuli, compared with what I stated, in the beginning of this work, whilst treating particularly of opium, wine, and ether.

When the paroxysm returns nearly at a given hour, the attack may be prevented by a repetition of electric shocks, continued, as in the case of intermittents, beyond the period of accession.

In the case already mentioned of a lad, who had swallowed a great quantity of flies, I stated, that
after

after the cathartics he had no return of his fits for six weeks; but some time after the expiration of that term he came to tell me, that in the last twenty days he had ten fits, one every other evening, and nearly at the same hour.

As he had sufficient notice of their approach, I ordered him to return before the usual hour of attack.

He did so, and was electrified with gentle shocks till all the symptoms had disappeared, after which he never had another fit.

This, although it is the only case I have recorded, is not the only one I have cured by *electricity*, when the periods were distinctly marked, and the fits regular in the time of their approach.

And I remember Mr. Randall, who for thirty years practised medical electricity on a most extensive scale in London, assured me, that in similar circumstances he had seldom failed to cure.

We have remarked above, that thunder clouds occasion epilepsy, and here we see that electricity in some cases effects a cure.

No physiologist has ever yet been able to ascertain precisely what office the electric fluid commonly performs in the animal œconomy.

We know that it is a stimulant exciting powerfully the action of the animated fibre, and we observe that it promotes the growth of vegetables, the evaporation of fluids, and the perspiration of ani-

mals, that it increases the flow of liquids from capillary tubes, and brings on suddenly in obstructed females their periodical discharge.

We see clearly, that it quickens, with wonderful rapidity, both the acetous and the putrefactive fermentations, and that when it burst impetuous from a cloud the vital principle is at once destroyed.

My valuable friend Dr. Fothergill, of Bath, assured me, that he saw a puppy killed by shocks of electricity sent through the head, and afterwards restored to life by gentle shocks directed through the region of the heart and lungs.

As often as the operation was suspended, the little animal relapsed; but perfectly recovered by a repetition of the shocks.

The operator was Mr. PARTINGTON, of Cavendish-square, who in the same manner cures Syncope and Asphyxia induced by lightning.

I have already mentioned electricity more than once, as an efficacious remedy, and shall have occasion to recommend it yet again in some chronical complaints.

To break the habit, by diverting the attention and by introducing a new association of ideas, as well as by the attendant exercise and change of air, all medical practitioners have agreed in recommending a long journey, which frequently proves an effectual remedy in this disease, when all the usual remedies have failed.

I cannot

I cannot conclude this article without requesting the student, to consult what has been delivered, in the preceding part of this work, on apoplexy, and what has recently been said on spasm.

Genus XLIII. *Convulsio*.

Convulsions.

THE symptoms are, alternate relaxations, with violent and involuntary contractions of the moving fibres, without sleep.

It is evident, that children, women, and other persons of manifest debility, are most subject to this disease; from whence we cannot hesitate to assign morbid irritability as the predisposing cause, and on this must be established our first indication of cure, in the liberal use of tonics and astringents.

The second indication will be to remove the occasional causes, which are the same as in epilepsy.

But in general it may be observed, that convulsions are most frequently sympathetic, and therefore to be cured by curing the primary disease.

Let the student, on this head, look back to what has been delivered on epilepsy and spasm, and forward to chorea and tetanus.

Sauvage gives a curious case of a young girl, who was almost incessantly, both night and day, convulsed in her head, eyes, tongue, neck, trunk, arms, fingers, feet, &c. yet retained her senses, and made efforts to answer when he spoke to her.

He cured her at the end of eight days by bleeding, followed by an emetic and a cathartic.

Genus XLIV. *Chorea.*

Dance of St. Vitus.

THE symptoms are, convulsive motions of the limbs or trunk, with such uniformity as to represent the gesticulations sometimes used in dancing.

SECTION I.

OF THE REMOTE CAUSES OF CHOREA.

THIS disease affects young people, chiefly those of a debilitated habit.

Hence we cannot hesitate to assign morbid irritability as the predisposing cause.

The

The occasional cause must be sought for in some error of the *non-naturals* ; or, as we may express it,

1. In something improper received into the system.

2. In something improper, that has been done, offering violence to nature.

3. In something retained, which ought to be evacuated.

SECTION II.

OF THE INDICATIONS OF CURE IN CHOREA.

THE indications of cure must here be taken from the remote causes occasional and predisponent ; but the misfortune is, that, in the cure of this disease, the attention has been confined chiefly to the latter.

To obviate debility, and thereby to diminish morbid irritability, practitioners have been commonly contented with giving, either the flowers of zinc, or white vitriol, or the calx of zinc precipitated from the latter ; and others have ordered the *cuprum ammoniacum*, given daily, beginning with one grain, and increasing gradually till the dose came to three or even four grains twice a day. But, in my opinion, attention should be paid first to the occasional cause,

cause, by obviating whatever error has been committed in the non-naturals, as expressed above, and then to the predisponent cause.

Dr. White, of York, makes mention of a lady, who, having by emetics brought up a great quantity of phlegm, was afterward completely cured by flowers of zinc.

And Dr. Whytt, of Edinburgh, tells us of a girl, aged fourteen, who was cured by a diarrhœa, during which she discharged much viscid slime by stool.

I do not mean to suggest, that slime in the intestines is the only occasional cause to be regarded, for that would be inconsistent with what has been recently stated; but, that both slime and worms, with other irritating causes, applied to the alimentary canal, require particular attention must be obvious to every one, who knows any thing of spasmodic affections.

Yet the attention must not be confined to irritation, for there may be mental irritation, or such as affects immediately the nervous system, to be sought for, as stated above, in various errors respecting the non-naturals.

1. If any evil passions have been excited they must be restrained.

2. If any natural evacuations have been checked; they must be restored.

3. If

3. If any thing improper hath been received into the system, or generated there, it must be rejected, either by emetics, by cathartics, or by both, as occasion may require ; after which the following prescription may be given :

℞ Limat. ferri, fcr. 2.

Sulph. Antimon. præcip. fcr. 1.

Aloc Socotrine, dr. 1.

Syr. Simp. q. s. f. Pil. 24.

Cap. ij. o. n.

That is,

Take filings of iron two scruples ; precipitated sulphur of antimony one scruple ; socotrine aloes one dram ; syrup of sugar a sufficient quantity to make four and twenty pills, of which take two every night.

At the same time the angustura bark, with iron and aromatic spices, as ordered for epilepsy, must be given twice a day.

Or, agreeable to the practice and recommendation of Drs. Hart, Ganbuis, White, Walker, Wright, Percival, Haygarth, and other eminent physicians, the more powerful tonics, such as the preparations of zinc and copper, in the doses already stated for epilepsy, or even arsenic, as recommended in intermittents, may be usefully prescribed.

To these should be added sea bathing, when it can be had ; or the use first of a tepid, and then gradually of the coldest fresh water bath may supply its place.

Genus XLV. *Tetanus*.

THE symptom is, spasmodic rigidity of almost the whole body.

SECTION I.

THE HISTORY OF TETANUS.

THIS disease is common in warm climates, more especially in summer, and is most frequent, when the scorching heat of a vertical sun is followed by heavy rain or by evening dew.

In the West Indies it may be considered as endemic among the negro slaves, who sustain the vicissitudes of heat and cold, more especially when, sleeping after a hard day's work, they are exposed to heavy dews.

But although it be endemic in warm climates, yet in every climate it frequently occurs after wounds; especially if the vital energy has been previously exhausted by intemperance, heat, pain, watchfulness,

or hard labour, and this most commonly when excitement, pain, and inflammation cease.

Tetanus appears either as *Opisthotonos*, *Emprosthotonos*, or *Trismus*.

In *Opisthotonos* the body is drawn violently backward, and all the muscles of the neck and spine are affected with rigidity.

In *Emprosthotonos* we have similar spasms and the same rigidity, with this difference, that the body is drawn forwards, more especially the head. And, in addition to these distressing symptoms in both cases, *Trismus*, that is a locked-jaw, is apt to supervene.

In the first Volume of the London Medical Observations may be seen a very particular description of *Opisthotonos*, by Dr. L. Chalmers, of South Carolina, of which the following are the chief particulars.

Stage the first.—Stiffness about the back part of the neck, and general lassitude, so that the patient cannot turn his head without turning his body. He feels a sudden and painful traction under the cartilago ensiformis, which striking through to the back, increases instantly the rigidity about the neck, draws the head back and shuts the jaws. Swallowing then becomes

becomes painful, and occasions return of spasm, which extends along the spine to the lower extremities. Pulse low and hard. Belly bound. Blood natural.

Second stage.—Spasm under the sternum returns every ten or fifteen minutes, followed by instant affection of the spine and jaw, continuing for a few seconds. Pulse variable from forty to eighty, always hard. Face pale at intervals, but most often flushed, and marked with expressions of distress. Rigidity becomes permanent. Drinking, moving, speaking, bring on the spasm.

Third Stage.—Spasms more violent, returning every minute and continuing longer; universal rigidity; the body being supported by the head and heels; the spine forms an arch. Pulse between the spasms quick, small, irregular. Heat great; strong sweat; delirium. A general convulsion closes the scene.

The duration is from twenty-four hours to six and thirty days. They who recover labour under such an atony, that for months they cannot raise themselves in bed without assistance.

SECTION II.

OF THE PROXIMATE CAUSE OF TETANUS.

THIS, agreeable to Hoffman, is, violent contraction of the membranes furrounding the spinal marrow and the nerves proceeding from it, which causes impetuous influx of the nervous fluid into the affected muscles.

The convulsive irritation, according to him, may be induced two ways: for either the membranes of the spinal marrow, being directly irritated, are convulsed themselves, and draw into consent (*in hanc convulsionem societatem*) other parts connected with them; or, some of these parts, being first spasmodically affected, communicate stricture to the spinal marrow, from which it extends by consent to other parts, between which there is no evident connection, unless through the medium of the brain.

Hence he would distinguish two species of convulsive motion, idiopathic and sympathetic.

SECTION III.

OF THE PREDISPONENT CAUSE OF TETANUS.

FROM the history of this disease it is clear, that the predisponent cause is morbidly increased irritability, as the consequence of extreme debility.

As for the source of debility in warm climates, it must be evident to every one, who has paid attention to the subject, that we need look for no other but excess of heat, unless among the slaves who endure extreme fatigue, and among such of the planters as are debilitated by intemperance and vice.

SECTION IV.

OF THE OCCASIONAL CAUSE OF TETANUS.

HITHERTO we have assigned only the predisponent cause, but have not pointed out the hornet, the wasp, nor yet the little fly, if I may be permitted to allude to the general remark, with which I introduced my observations on *spasim*; that is, we have found

found irritability, but not the irritating cause. This in some cases, and those the most common, may be discovered in the alimentary canal.

Let the student recollect what has been said already, in the beginning of this work, of the effects of heat alternating with cold; and likewise what every practitioner from the warm climates, either of the east or west, can teach him respecting those powerful agents, in loading the alimentary canal with bile and viscid mucus; and he will not be at a loss to find an irritating cause.

In support of this opinion, let the student further recollect what I have quoted from three eminent professors, Whytt, Macbride, and Hoffman. The latter, in his laborious and most inestimable works, is constantly inculcating this doctrine, that spasm and convulsions have most frequently their seat in the stomach, and more especially in the duodenum. He says,

“ Non frequentiores occurrunt convulsiones, quam quæ in duodeno potissimum intestino primum agnoscunt sedem: in quo stabulantes cruditates acidæ, atque viscidæ, ob concursum biliosi ac pancreatici succi, promptissimè acrem ac causticam fere indolem acquirunt.”

Tom. III. p. 26.

When the intestines are relaxed and loaded with viscid mucus, *worms* can form a lodgment, and, by their irritation, are frequently the cause of tetanus.

In the *Esprit des Journeaux* for August, 1793, we have two cases of *tetanus* described and cured by Dr. Roucher, of Montpellier.

The first is of a man aged 25, who with a locked jaw had an *Opisthotonos*. This patient, by three grains of tartarized antimony, threw up a most enormous quantity of viscid mucus (*une quantité énorme de matieres épaissées & glairuses*).

The other case is of a girl aged eight, who was freed from the same symptoms by anthelmintics with cathartics. She had copious evacuations, passed six worms, and by the repetition of these medicines she speedily recovered.

Sauvage has a species of tetanus, which he denominates *convulsio Indica*, observed principally in the isle of Bourbon. It originates in the exposure of wounds and punctures, although healed, to cold; and appears first as a cramp in the part, then as spasm in the head and back, but finally terminates in *trismus*, and, unless relieved, in death.

To cure it they open the wound afresh with a red hot iron, by which many are preserved.

In colder climates the most common cause of tetanus is, the partial laceration or even puncture of a nerve or tendon. Nay, should the tendon be merely touched, when deprived of its vagina, in a moment the whole system will be convulsed, and tetanus may be induced; yet it is remarkable, that whilst the coverings

coverings remain, the tendons may be pressed between the forceps, may be stretched considerably, and may be even sewed together.

Boerhaave had once warned a surgeon not to touch a tendon, which, in a suppurated wound, had lost its coverings; but the surgeon, by mistake, touched it with his forceps. Instantly the miserable patient was convulsed from head to foot, and for some time remained rigid with tetanus.

Hippocrates relates of Thrinon, the son of Damon, that having an ulcer on his ankle, to which a caustic dressing was applied, the irritation of the naked tendon induced an Opisthotonos of which he died.

We have already noticed the connexion between epilepsy and tetanus in describing the attendant symptoms of the former, and it appeared, that one of these is sometimes tetanus.

Van Swieten mentions a patient, who, during the epileptic paroxysm, was seized, whilst he was present, with opisthotonos to such a degree, that he heard the vertebræ of the back bone crepitate, and saw the head drawn back almost to the posteriors.

Yet when sleep came on, this tremendous symptom was instantly removed.

SECTION V.

OF THE INDICATIONS OF CURE IN TETANUS.

THE indications of cure are,

1. *To obviate the morbid irritability of the system.*
2. *To remove the occasional cause, whatever that may be.*

To fulfil the first intention we may pursue, either the highly stimulant plan, or we may rely on the common tonics and astringents.

Hippocrates recommends the seeds of hyosciamus; but modern practitioners of the greatest eminence, who have communicated their ideas to the world, and whose treatment has been most successful, are almost universally agreed in prescribing opium, in large doses, to be repeated frequently, till the spasm under the sternum ceases. Some of them give the tincture of opium, forty drops every four hours; others give it every half hour, till they have consumed an ounce in four and twenty hours, yet without producing the least approach towards intoxication.

To

To this powerful medicine some have added musk and camphor, without regard to quantity, till the whole tumult was allayed.

In a case of tetanus proceeding from a wound, a practitioner, of the highest eminence in London, gave a dram of opium and half an ounce of musk every four and twenty hours, and cured his patient.

In some cases the warm bath appears to have been eminently useful. Hippocrates considered warmth as mitigating pain, rigours, convulsions, tetanus; and, on the other hand, he affirms, that all these are induced by cold. On this principle he recommends warm fomentations, and his followers, Aretæus and Celsus, with some among the moderns, are of the same opinion. Dr. Chalmers, of South Carolina, particularly advises, that tetanic patients should continue in a warm bath, heated to 96 or even 102 degrees, till the pulse becomes soft and full, before the exhibition of the opium, which is then to be followed up in large doses every half hour, as I have before stated, till the spasm under the sternum ceases.

Dr. Rush, of Philadelphia, relies on tonics and astringents. He condemns the use of opium, and assures us, that by giving the Peruvian bark, three ounces in three pints of wine within the four and twenty hours, he soon relieved his patients, and cured them in a few days.

Among the tonics, physicians are now almost agreed in recommending the cold bath.

In the sixth Volume of the London Medical Journal, Dr. Wright informs us, that, adopting from Dr. Lind the use of the cold bath in cases of tetanus, that is by pouring two or three pails full of cold water every three or four hours over the body of his patient, he had never failed in a single instance to effect a cure.

Dr. Hutchinson cured one patient by *electricity*; and Dr. Colin, of Vienna, effectually relieved another by the flowers of *arnica*.

The second indication is to remove the occasional causes, which, as stated, may be,

1. *Viscid mucus*.

To evacuate this emetics are absolutely necessary, and these must be followed by cathartics. For the former tartarized antimony, three grains, triturated with five grains of testaceous powder, may be given in the morning fasting; and, at night, for the cathartic calomel will be found of all others the most efficacious.

Two cases are related by men of the most respectable authority, in which twenty grains of calomel were given in the space of four hours, with visible advantage, such indeed as, by the subsequent assistance of wine and bark, effected a perfect cure.

In the Nosologia Methodica of Sauvage, Class VII. Order IV. Genus XXI. Species II. we have
gastrodynia

gastrodynia flatulenta, of which he gives the following description :

“ Est vehemens dolor tensivus sub cordis scrobiculo, cum respirandi difficultate, flectendi antrorsum trunci necessitate qui flatuum emissionem sublevatur ; accedit pulsus imminutio, depressio, extremorum frigus, summa anxietas, præcordiorum angustia. Differt à gastritide, à gastrodyniâ hystericâ aliisque, quod epigastrium pressionem à manu factam toleret, quâ aliàs exacerbatur dolor.”

That is, a violent pain and tension under the scrobiculum cordis, with difficult respiration, a necessity of bending the trunk of the body forwards, which symptom is relieved by discharging flatulence collected in the stomach.

To these are added, diminution and depression of the pulse, coldness of the extremities, and straitness over the præcordia.

It differs from inflammation of the stomach, and from the hysterical affection of the same organ, in this particular, that the hand may be pressed upon the epigastrium without increasing pain.

Is not this a species of *emprosthotonos* ?

If we compare it with the first stage of *opisthotonos*, above described by Dr. Chalmers, we shall find a remarkable coincidence of symptoms, which naturally directs the mind to seek some similarity, or rather

ther identity, in the occasional and predisponent causes.

Among all the practitioners, with whom I have had occasion to converse, I never met with one who had ever seen, either the gastrodynia flatulenta of Sauvage, or the emprosthotonos of authors.

Yet I am intimately acquainted with a gentleman, who has been subject to a disease, of which I shall now enumerate the symptoms, and, as he has had it often, I can rely upon the accuracy of his description.

THE first notice he has of its approach is a certain anxiety and dread of evil, which he is not able to express. He then perceives a pain, which he can cover with his finger, on one side or other of his breast, about two inches below the nipple. This gradually increases, with some little difficulty of respiration, total inability to raise his head, or to turn it either to the right hand or the left, without moving the whole body; the shoulders are drawn up; the chin drawn downwards, till it approaches the chest, where it continues fixed.

To this symptom is sometimes added, an absolute necessity of bending the trunk of the body forwards. If he is lying on one side, and wishes to relieve himself by turning to the other, he is obliged for that purpose to rise up in bed, and then fall into the position to which he looks for ease.

He can never bring up wind from his stomach till the disease is going off.

The pulse is depressed and slow; the extremities are cold; and he can bear any degree of pressure on the epigastric region

gion without increasing pain. Costiveness is always an attendant symptom.

After having repeatedly tried the effect of cordial stimulants, under an idea that it might be a symptom of atonic gout, yet without obtaining the least relief, he had recourse to warm cathartics, by which, in a few days, the symptoms were somewhat relieved. But nothing was effectual, till he happily took first an emetic, which soon brought up a quantity of bile, and then calomel, which discharged bilious stools and a great quantity of viscid mucus.

Horfe exercise, with steel and the Peruvian bark, completed the cure.

2. *Worms.*

These must be destroyed, not by aloetics, because these are too heating and irritate the system, but by fantonicum, by spigelia, by decoction of *Geoffræa*, made with one ounce of the bark to fifteen ounces of water, of which the proper dose is about three ounces; or by calomel, followed by steel filings, rhubarb, bark, and bitters.

3. *The meconium.*

There is a species of tetanus to which new-born infants are subject, attended with locked jaw and opisthotonos. It is most frequent in warm climates, and is attributed, by the most judicious practitioners, to the neglect of nurses, in over-feeding their infants before they are cleared from the meconium. The

method of cure adopted by Dr. Chalmers was, to cleanse their bowels by rhubarb and clysters. This species is so destructive in Catalonia, that no one felicitates a parent on the birth of a child till the infant is nine days old. In Madrid, where the summers are much hotter, it is totally unknown.

4. *Wounds.*

If the nerve or tendon is lacerated, but not divided, all fear of tetanus will be removed by completing the division. And in all cases, where the spasm arises from local irritation this may be relieved by cutting off the communication between the spinal marrow and the part affected, which may be accomplished either by compression, by the knife, or by a caustic.

In Catalonia they bathe the foot in oil, when the aponeurosis plantarum has been wounded. Experience justified this practice.

Dr. Rush has favoured us with one case, which is highly interesting, where a nail was run into the foot without producing inflammation, and the jaw began to be affected.

He dilated the wound, and poured in spirit of turpentine, which, producing pain and inflammation, cured the patient.

It is worthy of our observation, that a splinter under the nail produces no convulsions, nor will tetanus

tanus ensue, if pain, inflammation, and suppuration, have taken place.

5. Should any other occasional cause present itself to the attention of the practitioner, this must be obviated; but should the occasional cause, after his most diligent researches, be concealed, he must then place his whole dependance on the medicines which answer the first intention, that of removing the predisponent cause.

Genus XLVI. *Palpitatio.*

Palpitation of the Heart.

THE symptoms are, bounding of the heart to be felt against the ribs, frequently with a small, weak, intermittent, pulse, and followed sometimes by Syncope.

SECTION I.

OF THE PREDISPONENT CAUSE OF PALPITATION.

The persons most liable to this disease are, those of a relaxed and irritable fibre; the young, particularly

cularly females; the plethoric; those in whom accustomed evacuations fail; and such as have been reduced by copious hæmorrhages or exhausted by disease. Hence it is clear, that the predisponent cause is debility and morbid irritability.

SECTION II.

OF THE OCCASIONAL CAUSE OF PALPITATION.

PALPITATIONS may be induced by passions of the mind, such as vehement desire, joy, anger, terror, and surprise; or by muscular exertion, as in running, leaping, and the like; by long continuance in a warm bath; by flatulence and distention of the bowels; by tight bandages round the waist or on the lower extremities; and by eruptions prematurely checked.

Malpighius particularly remarks, that he was frequently attacked by troublesome palpitations, after eating legumina; and Hippocrates observes, that flatulence always attends this affection of the heart. No wonder then, that hysterical and hypochondriacal patients should complain of palpitations.

Forestus, as quoted by Hoffman, relates the case of one, who, sleeping at noon with tight garters, was seized with palpitation, but relieved by loosening them.

It has also been established as a fact, that, by suppressing the sweating of the feet, by repelling herpetic eruptions or any exanthemata, as well as by the drying up suddenly of ill-conditioned ulcers, and by the gout, when retrocedent, the same distressful symptom has been produced.

I say nothing of polypus, because it may be the consequence of death and not the cause of palpitation; nor do I speak of organic affection, because it is irremediable.

SECTION III.

OF THE PROXIMATE CAUSE OF PALPITATION.

THE proximate cause assigned by Hoffman is, stagnation and congestion of blood in the right chambers of the heart, inducing impetuous influx of the nervous fluid to the nerves and fibres of the heart, which excites their preternatural contraction.

In support of this opinion he suggests, that no organ is so plentifully supplied with nerves as this. It has no less than five pair. One from the par vagum, another from the superior intercostal, a third from the vertebral, a fourth from the inferior intercostal, and the fifth from the phrenic. The three first are derived from the brain itself; the two latter from the spinal marrow.

He remarks, that all the fasciculi of fibres and fibrilli composing the muscles of the heart, are each covered with the finest contexture of arteries and nerves.

This wonderful organ hangs suspended in the chest, so as to move freely; and, in case of palpitation, to bound with violence against the ribs, so as even to excite the absorbents and to destroy the bones.

Now when the blood, after having diffused a genial warmth and vital energy over the system, and after having supplied the secretory glands, but more abundantly the brain, with all that is needful for the performance of their functions, returns from the minutest through the larger vessels to the vena cava, and from thence, with the addition of chyle and lymph, received from the thoracic duct, by the subclavian vein, rushes into the right chambers of the heart; the swelling torrent, by distention; stimulates this organ to powerful contractions; and as the stream is prevented, by the tricuspid valves, from returning backwards to its source, it escapes through the pulmonary artery into the lungs, where, as already stated, it purges itself, and acquires fresh oxygen and heat.

From hence it returns by the pulmonary veins to the left chambers of the heart, to be again distributed throughout the system.

Thus the circulation is maintained till the silver chords

chords are loosened and the golden bowl is broken at the fountain.

Hence it is evident, that for the natural motion of the heart there is required,

1. A due proportion between the quantity of fluid to be moved and the natural power of the heart.

2. A due degree of vital energy, or moving power, in the heart, and therefore a sufficient influx both of nervous fluid and of well oxygenated blood.

3. Perfect organization and freedom from incumbrance in the heart itself, and in the vessels, which either bring back the blood, or receive it from the heart.

But to cause that degree of palpitation, which is regarded as a disease, there is required,

1. *Some obstacle to free circulation, as already stated, with*

2. *A more abundant influx of the nervous fluid to the stimulated part.*

This violent bounding and contraction of the heart, repeated with extreme rapidity, may be suspended, but cannot cease altogether, till the enemy is expelled and the remote causes are removed.

SECTION IV.

OF THE INDICATIONS OF CURE IN PALPITATIONS.

THE indications will be evidently these,

1. *To quiet the violent commotion of the heart.*
2. *To promote a free circulation of the blood.*
3. *To remove the occasional causes of the disease.*

To answer these intentions, Professor Hoffman recommends diaphoretic antimony with nitre and restaceous powders, and speaks highly of his anodyne.

In case of flatulence, with costiveness, a dry skin, and cold extremities, he orders, with the above, frictions, the warm pediluvium, and carminative clysters.

Should these applications fail, and should the fulness of the vessels admit of bleeding, this may be tried.

Galen, and after him the most eminent practitioners, affirm, that venesection, with medicines and aliment of the attenuating kind, are infallible in the cure of palpitation; but this must be understood

merely in cases of plethora, or uncommon spissitude and richness of the blood.

In cases that depend on debility and irritability morbidly increased; a generous diet, with tonics and astringents, must be freely given, as recommended in epilepsy and chorea.

In all cases the body must be preserved open, and the perspiration free.

Sauvage makes mention of fifteen species of palpitation, of which most are from organic affections. Of the rest we may remark;

11. *Palpitatio Arthritica.* 12. *Cblorotica.*

13. *Hysterica.* 14. *Melancholica.* 15. *Febricosa.*

These are evidently symptomatic, and therefore to be relieved by curing the primary disease.

Genus XLVII. *Dyspnœa.*

Difficult respiration, continual, and without sense of stricture; cough frequent through the whole course of the disease.

The idiopathic species are reckoned by Dr. Cullen,

1. *Catarrhalis*, with a frequent cough, throwing up a great quantity of viscid mucus.

2. *Sicca*, with cough mostly dry.

This includes *Dyspnœa a tuberculosis*, *D. a steatomatis*, *D. ab hydatidibus*, and *D. polyposa*, of Sauvage, with his *Orthopnœa a lipomate*, which is the same disease with his *D. a steatomatis*.

3. *Aëra*, from change of temperament in the air.

4. *Terrea*, from earthy concretions in the lungs.

5. *Aquosa*, with deficiency of urine and œdematous swelling of the feet, but without fluctuation in the chest, or other symptoms of hydrothorax.

6. *Pinguedinosa*, in subjects who are oppressed with fat.

7. *Thoracica*, from deformity of the chest.

8. *Extrinsæca*, from extrinsic causes.

This includes seven species of Sauvage, to be readily distinguished by the offending matter, whether dust, metallic fumes, poisons received into the stomach, or compression of the lungs by bronchocèle.

Beside these species Dr. Cullen mentions twenty-seven from Sauvage, which, like many of the former, are clearly symptomatic. Of these seven are derived from diseases of the heart and larger arteries; seven from tumors and distention of the abdomen, preventing the descent of the diaphragm; and thirteen from other diseases, including *Orthopnœa a verminibus*, which Dr. Cullen should have arranged under his *Extrinfeca*.

Of all the enumerated species, Dr. Cullen has judiciously remarked, that they are diseases which either do not admit of cure, or belong to other diseases, as merely symptomatic, excepting only the *Extrinfeca*, whose occasional causes are to be carefully avoided.

Genus XLVIII. *Asthma*.

Spasmodic Asthma.

THE pathognomic symptoms are, difficult respiration returning at intervals, with sense of stricture across the breast and in the lungs; wheezing; hard cough at first, but more free towards the close of every paroxysm, with a discharge of mucus followed by remission.

SECTION I.

OF THE ATTENDANT SYMPTOMS AND PROGRESS
OF ASTHMA.

ARETÆUS among the symptoms of asthma has remarked, previous to the attack, a tightness and stricture on the chest, unusual indolence, hoarseness, cough, distention of stomach, nausea, eructation, watchfulness, and deficiency of animal heat during the night.

As the disease advances, the cheeks are red and the eyes are prominent, as in strangulation.

The patient snores even if awake, but more when sleeping. He has in general the keenest and most impatient desire for fresh cool air; and for this reason feels distress, when confined within the limits of a house, although the apartments should be spacious.

From the same sensation of distress he raises himself upright and breathes with his mouth open.

The pulse is quick, small, and commonly oppressed.

Costiveness, with vomiting of bile, and a copious discharge of limpid urine, are prevailing symptoms.

After dinner, and more especially after a full meal, there is commonly much flatulence in the stomach,

mach, with drowsiness and increased dyspnœa; but the violence of the paroxysm is commonly from about midnight till towards morning, when it is relieved by sleep.

In the progress of the disease, a slight fever of no certain type comes on, with evening exacerbations.

The face, the hands, and arms, begin to swell; the countenance is pale and lurid; the legs become œdematous; and ascites, anasarca, a dropsy of the chest, or a lethargy, supervenes. A torpor of the arms is felt, preceding partial paralysis, and the distressing scene is closed by suffocation.

SECTION II.

OF THE PERSONS MOST SUBJECT TO ASTHMA.

THESE are chiefly of the sanguine temperament, with small, but numerous, vessels; the corpulent and plethoric; but more particularly persons of a contracted chest; the intemperate, and such as have been debilitated by excessive hæmorrhage, or in whom any accustomed evacuations, either sanguine or serous, have been suppressed; those also in whom herpetic eruptions have been unseasonably checked, or

ulcers suddenly dried up ; but particularly those who are much oppressed with flatulence ; and all these more especially at the vernal and autumnal equinoxes.

SECTION III.

OF THE CAUSES OF ASTHMA PROXIMATE AND REMOTE.

THE proximate cause is certainly, a spasmodic constriction of the muscular fibres of the bronchiæ, communicated by consent to the larynx and the diaphragm.

The predisponent cause is morbid irritability.

The occasional cause is to be sought for in some error of the non-naturals, as already stated in the preceding section.

SECTION IV.

OF THE SPECIES OF ASTHMA.

SAUVAGE enumerates eighteen species of asthma, taken principally from the works of Hoffman.

1. *Humidum.* 2. *Convulsivum.* 3. *Hystericum.*
4. *Hypochondriacum.* 5. *Arthriticum.* 6. *A Polypo*
Cordis. 7. *Pulverulentorum.* 8. *Stomachicum.* 9.
- A Gibbo.* 10. *Equinum vel Emphysematosum.* 11. *Ex-*
anthematicum. 12. *Metallicum.* 13. *Cachecticum.*
14. *Venereum.* 15. *Plethoricum.* 16. *Catarrhale.*
17. *Pneumodes.* 18. *Febricosum.*

Of these, such as are not symptomatic are reduced by Dr. Cullen to three species :

1. *Spontaneum.* 2. *Exanthematicum.* 3. *Pletho-*
ricum.

Species 1. *Spontaneum* is the same with the flatulentum of both Hoffman and Floyer, and with the stomachicum of Baglivi and Sauvage.

Among the specific symptoms are, previous to the paroxysm, fulness and distention of stomach ; insipid eructation ; tightness in the præcordia ; co-

pious discharge at night of limpid urine; weight, anxiety, and difficult respiration.

About two in the morning the paroxysm commences, and, if it is severe, induces bilious vomiting. The pulse is first quick and irregular, then weak and intermittent. In the progress of the fit the hands and feet are cold, the face becomes pale, there is sometimes heart-burn with palpitation, and the whole is closed by sleep.

BAGLIVI, with the utmost propriety, considers this as an affection of the stomach.

Dr. WHYTT has particularly noticed sympathy with the stomach, when the nerves of this organ are affected by wind, phlegm, or crudities, as one cause of spasmodic asthma.

Species 2. *Exanthematicum* is the same with the *convulsivum* of Hoffman.

The specific symptoms are tightness on the chest, painful sensations on the sternum extending to the scapulæ, torpor of the arms which sometimes become paralytic. In this species the spasmodic stricture is not confined to the musculo-tendineous membrane connecting the annular cartilages of the bronchia, but is communicated to the intercostal muscles, preventing thereby the expansion of the chest, and, as these constricted regions borrow their nerves from the vertebral and dorsal, which send branches to the arms, these parts must suffer as above described.

The

The occasional cause may be sought for in the premature retreat of erysipelas, measles, or any other of the exanthemata; in the repulsion of herpetic eruptions, scald head, itch, &c.; or in the drying up of inveterate ulcers. It may be induced by a sudden perspiration in general, but more especially by repelling that of the feet, when copious and offensive, or, as frequently happens, by retrocedent gout.

Species 3. *Plethoricum* is the same with the *sanguineum* of Hoffman.

The specific symptoms are, redness of the face, fulness of the vessels, with other symptoms of plethora; palpitation of the heart; pulse quick, unequal, small; and a slight Pyrexia attending the first paroxysms.

It is induced by indolence in conjunction with full diet, but more particularly by the stoppage of accustomed evacuations.

In whatever part of the system spasmodic stricture first takes place, if it induces congestion in the right chambers of the heart and in the lungs, spasmodic contraction of the bronchial tubes and vesicles will be the consequence. For it may be universally received, that immoderate distention produces spasm, and spasm contributes to congestion. Hence it is that the lungs of those, who have died of this disease, have been discovered full of black, extravasated, and stagnant, blood.

SECTION V.

OF THE INDICATIONS OF CURE IN ASTHMA.

THESE may be taken from the *proximate cause*, and then ether with opium must be given frequently in considerable doses, till the paroxysm is relieved.

R Ether vit. dr. ʒ. i. Opii gr. 40. Aq. font. un. 2.
M. p. r. n. s.

Or, the indications may look towards the *predisponent cause*, which calls for tonics, such as the metallic calces, principally steel in its various preparations. But on whichever of these causes we build our indications, we must not be unmindful of the *occasional causes*, as already stated in the several species.

Species 1. *Spontaneum*. Here, as I have said, the occasional cause must be sought for in affections of the stomach, and I am confirmed in this opinion, not merely by the authority of the most sagacious practitioners, BAGLIVI, HOFFMAN, and WHYTT, but by a consideration of the symptoms, and more especially by the effect of an emetic, for in this species of asthma it never fails to give relief.

R Vin. Antimon. dr. ʒ. i. Oxymel Scill. dr. 6.
M. pro Emet.

R Ipecac. gr. 15. vespere sumend.

The former of these professors gave his emetic every morning.

Dr.

Dr. THORNTON, having the misfortune to see his mother, and uncle General Brathwaite, afflicted with *asthma* for more than twenty years, and his aunt subject to mucous expectoration, but without asthma, was naturally excited to pay every attention to this most harassing and frightful complaint.

As *emetics* were the only remedies that gave them relief, but by frequent repetition, as they aggravated the disease, by injuring the tone of the stomach; and as *bitters* with *bark* and *steel flings*, though at first of service, were contra-indicated as locking up the accumulated mucus in the stomach, Dr. THORNTON from thence concluded, that in such *asthmas* the *emetic* and *tonic* plan might be successfully conjoined with the *inhalation of oxygen air*; for in asthmatic patients there is evidently a deficiency of the *vital principle* in the blood, as appears from their fallow countenances and cold extremities, arising probably from straitened respiration during each paroxysm, and because, when the stomach is diseased, the blood loses in some degree its attractive power for *oxygen*, as was before shewn p. 34. Nor has this ingenious physician been at all disappointed in his views.

During the last fifteen months Dr. THORNTON has administered the pneumatic remedies to a multitude of poor people, and by the happy combination of their powers with other well known remedies, his cures in this, and other complaints, have at length extended from the lower to the higher conditions in life.

life. From a number of interesting cases of asthma I shall, however; only select one, as there was in addition to it a total loss of smell, rendering the cure still more arduous.

THE Rev. Dr. ———, an intimate friend of the celebrated oculist Mr. WATHEN, had for more than two years been afflicted with *asthma*. The paroxysms were singularly severe, so that he could not breathe but in a contorted position of his body; they recurred regularly each night, and lasted in general from five to seven hours. Being quite exhausted, he would at length fall asleep, but awoke with a parched tongue and very languid.

He had been under the care of several very eminent physicians, and latterly under Dr. WARREN, who told him, with his accustomed liberality, that he was persuaded, from a very extensive experience, that *asthma*, when once fixed in the habit, was not to be removed by art, however it might be palliated, and he must not therefore entertain the fallacious hope of a cure from medicine, and fly from physician to physician, but must patiently resign himself to the affliction. But daily losing flesh and strength, his family began to be very apprehensive, and Mr. WATHEN having told them of the extraordinary relief and final cure, obtained by a young lady of his acquaintance, in the most violent *spasmodic attacks*, when the prescriptions of the ablest physicians could render her no service, and that an *asthma* even of *forty years* standing had been greatly relieved by the inhalation of the vital air, this gentleman was encouraged to confide himself to the care of Dr. THORNTON.

In ten days time, by cleansing the stomach of viscid mucus, and restoring the vital principle to the blood, his paroxysms were somewhat less violent; after which, by strengthening the system, and still continuing the inhalation

tion

tion of an oxygenated atmosphere, he had several intermissions, and in two months he was perfectly free from asthma.

He continued throughout the whole of last winter perfectly well, and at the present time is, as Mr. WATHEN informs me, in the full enjoyment of the blessing of health.

Species 2. *Exanthematicum*. From a consideration of the occasional causes, the special indication, which naturally presents itself, is, to promote a determination to the surface and to the lower extremities.

This intention may be answered by mild diaphoretics, by carminative clysters, by friction of the feet with either a hare's skin or a flesh brush, and by tepid pediluvium. To these gentle diuretics and cathartics, such as nitre, sulphur, squills, and salt of tartar, may be added to advantage.

The subsequent prescription has produced wonderful effects, after others had been tried in vain.

R̄ Flor. Sulph. un. 1. Pulv. Sennæ, Zinzib, āā dr. 2.

N. Moschat, dr. 1½. Mel, un. 2.

M. f. Elect. c. M. N. M. bis in die.

That is,

Take sulphur one ounce; fenna and ginger, of each half an ounce; nutmeg a dram and an half; honey two ounces. Make an electuary, and take the size of a nutmeg twice a day.

This composition has descended in the FERRERS family from their ancestor, who was cured by Boerhaave, when the English physicians could give him no relief.

Hoffman

Hoffman for their common beverage gave his patients old hock and Seltzer water. Dr. Whytt used blisters on the back.

Species 3. *Plethorium*. The special indications arising from the occasional causes are,

1. *To obviate plethora.*

2. *To restore the accustomed evacuations.*

The first intention may be effectually answered by abstemiousness and regular exercise, by gentle laxatives, and by avoiding heat.

To answer the second intention the suitable evacuants must be resorted to.

In all cases of asthma, more especially in old subjects, I would earnestly advise the constant use of flannel next the skin.

Sir John Pringle recommends strong coffee during the asthmatic paroxysm; and Dr. Percival, of Manchester, has adopted this practice with manifest advantage.



2.5

